Featuring an interview with the author of LikeWar: The Weaponization of Social Media, P.W. Singer
Cover design by Eugenia Perez Matheus.
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In honor of the decision-makers in Washington, DC, and throughout the world. We hope that these articles inform them, the CMU community, and the public.
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Dear Reader,

I am proud to share the sixth edition of the *CIRP Journal*, sponsored by Carnegie Mellon University’s Center for International Relations and Politics. The *Journal* publishes scholarly research on foreign and domestic policy by students from the International Relations and Politics major, in the Institute for Politics and Strategy, and other Carnegie Mellon programs. For this edition, the *Journal’s* student guest editor chose decision-making as the theme.

The articles presented here were selected from many excellent submissions. They demonstrate the breadth of our students’ interests, the depth of their commitment to our society, and their insight in applying what they have learned in their classes and life experiences, to complex policy issues. Their work is notable for its sensitivity and respect for individuals making difficult choices. Carnegie Mellon faculty take pride in work that transcends individual disciplines, bridges the worlds of theory and practice, and provides service to society. It is very gratifying to see our students strive for the same goals.

I would like to thank P.W. Singer, Strategist at New America and an Editor of *Popular Science* magazine, for sitting down with *CIRP Journal* Guest Editor Millie Zhang, to discuss the rise of social media, the new forms of warfare that it has engendered, and the challenges posed to individuals and policy makers. The interview ends with a call for the kinds of research found in this edition of the *Journal*. You will find it to be excellent reading.

Sincerely,

Baruch Fischhoff  
Publisher and Editor-in-Chief  
Howard Heinz University Professor  
Institute for Politics and Strategy  
Department of Engineering and Public Policy  
Carnegie Mellon University
Letter from the Guest Editor

Dear Reader,

I chose to major in International Relations and Politics (IRP), a degree program under the Institute for Politics and Strategy (IPS) at Carnegie Mellon University, as a result of my high school experience. I knew very little about how the government in my own country was run and how I, as a citizen, was represented by our politicians. Even today as a student who has taken nearly two years of coursework regarding international relations and political science, I still find myself learning something new about politics, both domestic and international, every day.

My article for this journal investigates the general public’s reactions toward and perceptions of the government shutdown that occurred earlier this year through a hindsight bias study. As this project was my first attempt in conducting a study of this caliber, there were undoubtedly some setbacks and obstacles that tested my ability to complete the research study. It was with the help and guidance of Dr. Baruch Fischhoff, who had a good understanding of what I wanted to achieve through this project, that I was able to complete the study, despite my inexperience.

As you read through the rest of the journal, you will see that there are a variety of topics that examine decision-making in international relations and politics. I would like to thank all of the contributors for their insightful articles and hope that readers enjoy these articles as much as I did.

Although my experience as an International Relations and Politics major has been quite demanding, it is most definitely rewarding. I look forward to witnessing the continued growth of IPS and the CIRP Journal, and the future success of my fellow classmates.

Sincerely,
Millie Zhang
Guest Editor
The Evolution of American Military Strategy: Theater to Asymmetric Warfare

EMILY PETERSON

The views expressed are those of the author and do not reflect the official policy or position of the United States Marine Corps, Department of Defense, or the United States Government.

Major Theater Warfare
American military strategy after the Cold War has been based on a two-major-theater war standard, prescribing the capability to fight two simultaneous wars against two major state actors. The Obama administration decided to terminate the standard in 2012 on recommendation of the 2010 Quadrennial Defense Review. The Review emphasized the importance of focusing political and military efforts on a broader range of threats from a plethora of adversaries in simultaneous, evolving domains. The policy change initiated a $450 billion defense budget cut, arguably decreasing the scope of US military capabilities.

The main choice presented to President Obama and his administration was between conventional American military capabilities supported by a large defense budget and a more agile policy supported by a smaller defense budget. Past policy makers reasoned that ‘peace through strength’ would deter major actors with the capability of a serious conventional war threat, and thus wanted to retain the two-major-theater war standard. These sentiments were guided by fears of being unprepared for a major conflict and focusing too narrowly on a single adversary. However, the Obama administration reasoned that the capability to fight two wars at once was not worth the money spent and that the risk of fighting two major wars at once was low enough to cut the standard from military policy. Although two major state actors attacking the United States has extremely high potential severity, it has a very low probability. The 2010 Quadrennial Defense Review reasoned that it was more probable for smaller, non-state actors (and/or larger, state actors using similar asymmetric means) to create conflict and competition.

A Slimmer, More Agile Policy
The decision to end the two-major-theater war standard favored a slimmer and less expensive policy focusing on the shift in the way wars are fought. Instead of conventional and traditional

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warfare, most threats today arise from hybrid and asymmetric warfare. This shift is epitomized by then secretary of defense Robert Gates’s statement that, “we have learned through painful experience that the wars we fight are seldom the wars that we planned [and] as a result, the United States needs a broad portfolio of military capabilities, with maximum versatility, across the widest possible spectrum of conflict.” This wide spectrum is harder to predict, which can lead to reliance on a simulation heuristic, making people predict higher likelihoods of a theater war outcome as they are able to imagine the scenario more easily. Additionally, this heuristic can contribute to incorrectly predicting adversarial actors’ behaviors based on past actions, intentions, and experience. Then and now, it is vital for war game techniques to recognize this heuristic and not over-represent what is familiar.

The 2012 Defense Strategic Guidance (DSG)—which replaced the two-major-theater war standard—focused on building, maintaining, equipping, and implementing a more agile force concentrated in the Asia and Pacific region and focused on using more advanced technological capabilities waged by asymmetrically capable state and non-state actors. The new policy yielded $450 billion in immediate savings for the year and postulated a $4 trillion deficit reduction in the succeeding twelve years. It outlined a "smart, strategic set of priorities" which was agile and strayed from large conventional war initiatives. This system allowed for more flexibility for commanders and political leaders to make decisions in a more volatile landscape. However, it dually required them to be more adept and anticipatory to potential actions of adversaries on a wider spectrum of domains. An immediate word of caution came from the Federation of American Scientists which felt that "the DSG appeared to call for doing less with less [and] in doing so, the DSG made significant assumptions about the future global context. It included willingness to assume some greater risk, without specifying the scope and scale of that risk.”

The effects of this decision are manifested today in current American strategy. Today, most warfare is fought in the “gray zone.” This refers to more clandestine actions which are not declared acts of war; however, these activities are considerably more aggressive than regular interstate and global competition. Overt US military strength has pushed adversaries to use asymmetric means to attempt to level the playing field. These actions have manifested as hybrid warfare, including cyber warfare, proxy warfare, and many other full-spectrum and non-linear warfare techniques. The United States must adapt to this changing type of warfare, but must also be able to balance current conventional military training, funding, and forces in order to maintain deterrence and ‘peace through power’. It is cost and effort exhausting to do both. According to General Paul Selva, Vice Chairman of the Joint Chiefs of Staff, if a situation arose, “we [would] have to go to the secretary and president and say: We are assuming risk on behalf of the American people because we can't do this set of tasks. We can either appropriate the funds to get those tasks done, or we can articulate the risk.”

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7 Aaron Mehta, “The Pentagon is planning for war with China and Russia - can it handle both?” Defense News, January 30, 2018.
Countries Capable of Both Theater and Unconventional Warfare

General Selva also stressed concern of a potential full-scale war with either or both Russia and China in the near future. The United States needed to be prepared to fight traditional style warfare in the air, on the ground, and at sea, as well as prepared to win asymmetric conflicts in domains such as space and cyberspace. Supportive of this concern—particularly concerning the 2012 defense spending cut and removal of the two-major-theater war standard—Representative Buck McKeon, Republican Chairman of the House Armed Services Committee, adds that “in order to justify massive cuts to our military, [the Obama administration] has revoked the guarantee that America will support our allies, defend our interests and defy our opponents. The president must understand that the world has always had, and will always have, a leader. As America steps back, someone else will step forward.”

Russia is one of the major militarily and politically capable competitors to the United States. A prominent example of their capability and intentions is their online interference in the 2016 US elections. A thirty-seven-page indictment by the Federal Bureau of Investigation (FBI) exposed that the scope of their meddling included over $100,000 of ads on Facebook in addition to an extensive online troll bot farm which created a false information environment using video, memetics, narratives, conspiracies, and character attacks which appeared to be sourced from authentic American accounts. The target audience was Americans with polar and extreme views and the goal was to harden their existing radical biases. In essence, the campaign was not to change views, but to change behavior. A large impact of the meddling was that it was difficult to separate false information from the truth.

The two-major-theater war standard originated from the Cold War aftermath. Today the Russian economy is much stronger than the Soviet Union economy. However, it is also more dependent on trade than the Soviet Union was as it is a large supplier of gas and oil to Europe. Russian military and diplomacy capabilities are weaker than during the Cold War. After the collapse of the Soviet Union, buffer countries began to join NATO and/or the European Union, bringing the West to Russia’s borders. Yet Russia has continued to improve military capabilities through advanced anti-access/area denial (A2/AD) and has shown recent military aggression and expansion in the occupation of Crimea and potential involvement in shooting down civilian airplanes. Many of the current Russian tactics are unconventional and fall in the “gray zone” discussion.

China is another capable state actor who could initiate and/or desire a conventional theater war with the United States. China has claimed territory and islands in the South China Sea using the justification of a historic ‘nine dash line’ that is not recognized by the international law of the seas. Additionally, China has allocated a large amount of effort and funding to naval port building, island creation, and ship building. In order to bolster territorial claims, China has been using fishing boats to intimidate neighboring nations and to collect intelligence, surveillance, and reconnaissance (ISR) data. Because the United States continues to sail ships through the contested waters which the United Nations and international law considers neutral, tensions are rising.

China and the United States are currently in an unconventional ‘trade war’. A 2017 report

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from the Commission on the Theft of American Intellectual Property testified that “Chinese theft of American intellectual property currently costs between $225 billion and $600 billion annually.”\(^{11}\) In 2018 the Trump administration placed heavy tariffs on Chinese goods due to the theft of intellectual property. Stanford Law Professor Paul Goldstein summarizes the issue by citing that “theft—often cyber theft—of extraordinarily valuable trade secrets and know-how, and the technology transfers required of American and other foreign companies as a condition to doing business on Chinese soil” gives China “a degree of legitimacy that outright industrial espionage lacks.”\(^{12}\)

**The Evolution of Warfare**

Although it is extremely important for the United States to be prepared for theater-type warfare with large state actors such as Russia and China, the threat from non-state actors continues to be a priority of both the US military and overall policy, though the domain has shifted to encompass both terror and now cyber. Unable to match the overwhelming funding of the American conventional military force, much of the current warfare innovation has been developed in the cyber and technological domains. Additionally, the problem of attribution arises with a technologically advanced warfare environment, allowing smaller actors a larger space on the battlefield and the ability for adversaries to disguise as other actors. Consequently, the United States needs to model a stronger asymmetric strategy to include defensive and offensive cyber capabilities. Current critiques condemn American defense initiatives for not being able to keep pace with offensive cyber-attacks. In recent reports, “Russia has targeted hundreds of thousands of home routers, China has carried out prolific theft of individual health records, and North Korea has carried out high-profile assaults on private Western companies—all without tripping over designated critical infrastructure.”\(^{13}\) These problems will likely increase due to ineffective action by both legislators and private industry.

Many cyber specialists advocate for privatization and decentralization of cyber defense security. Most cyber-attacks occur in the private sector rather than official government networks. Working on the solution in the same domain would decrease red tape and encourage information sharing both publicly and between corporations. However, this leaves the question of the role of government. Chief Intelligence Strategist of Cybersecurity at FireEye, Christopher Porter, summarizes the potential government role as “prioritize[ing] use of its military and intelligence services to counter foreign government hacking operations and information campaigns while they are in progress, up to and including disruptive attacks on network infrastructure supporting those attacks, regardless of what those attacks target and before using those resources to support conflict in other domains.” In successful implementation, both defensive and offensive cyber weapons used domestically would be able to project kinetic, conventional military power on physical battlefields overseas.\(^{14}\)

The current United States Cyber Command (USCYBERCOM) command strategy explicitly distinguishes cyberspace as an operational domain and delineates specific means to protect American assets, secure networks, and carry out necessary tasks. Dr. Richard J. Harknett, Professor and Head of the Department of Political Science at the University of Cincinnati, maintains that this vision “boldly aligns with the strategic context and operational

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14 Ibid.
environment that have emerged over the last decade and provides a comprehensive vision of how to tackle these new realities;” and that future “successful implementation of this new strategic and operational approach will require new thinking across the government and academia to ensure that the right organizational structures, decision-making processes, capabilities development pathways and authorities are in place. It has provided the foundation for such new cyber thinking.”

Another technological hurdle for the United States and global warfare strategy is artificial intelligence (AI) research and technology propelled by machine learning and advanced algorithmic processing techniques. Former Army Officer and FBI Agent, author Clint Watts identifies artificial intelligence, social bots, and deepfakes as the three technological capabilities which are potentially most harmful to the United States if they come to fruition. Artificial intelligence can add the capability of mining preferences to current Russian social media meddling, which would more directly, effectively, and efficiently target and align disinformation techniques customizable to specific people. Social bots can be used to talk to each other, creating a foundational conversation, subsequently speaking with a user and creating a ‘team up on’ effect, leading their victim to believe in mass support behind an idea. Deepfake techniques can be used to create fake audio and video which can especially devastate areas which do not realize this technological capability is even possible. For example, deepfakes could be used to create non-existing video of a speech from a political leader with the intention of starting ethnic riots and fighting in poorer, less developed countries. These rapidly evolving technologies will make strategy choices even more difficult for decision-makers moving forward.

In order to protect against these capabilities, computer security must be strengthened at the application level, network level, and human level. The same AI technology used for exploits can be used to automate the process of identifying and quickly defending against intrusions. However, the nature of these AI techniques innately procures more exploits such as evasion and poisoning techniques which trick a machine learning algorithm into an incorrect decision using media and images specifically designed to deceive the classification algorithm. In addition, problems present themselves in generalizability, scale, and deployability of the technology coupled with ethical concerns which arise as technology and algorithms increasingly replace human cognitive thought and decision-making. Although current technology is not close to a “general artificially intelligent” system—which can think for itself without human decision points and benchmarks—or a fully autonomous weapon, the challenges increase exponentially as AI and machine learning technology advances.

The Friction of War

“Everything is very simple in war, but the simplest thing is difficult. These difficulties accumulate and produce a friction which no man can imagine exactly... This enormous friction ... is everywhere brought into contact with chance, and thus incidents take place upon which it was impossible to calculate.”

—Carl von Clausewitz, On War

The United States must address increasingly creative asymmetric threats in the physical and online domains, but must also balance a powerful conventional force and fully operate in a counterinsurgent role. The 2012 Defense Strategic Guidance (DSG) priorities of countering terrorism and irregular warfare, operating effectively in cyberspace and space, and conducting stability and counterinsurgency (COIN) operations highlight the shift in military doctrine. Moving away from the two-major-theater war standard and focusing on the type of attacks and their probability and severity over the specific actor allows America to better maintain a ready military and foreign policy plan. If the United States kept the theater warfare strategy, state actors like Russia and China along with independent and non-state actors would most likely continue their “gray zone” and asymmetric activities, blindsiding the United States which would be unprepared for an unconventional fight.

Kinetic and conventional warfare are important and represent the basis of military in theory and action, but the inevitable movement to more sophisticated technological warfare will drive global action and interaction. The same struggle for power, authority, and autonomy will continue to dominate military and political strategy, although it will involve more actors with greater access and spread over a larger spectrum of potential attacks and warfare mechanisms.
The Complexity of Immunizations

JOSHUA PINCKNEY

Hundreds of thousands of people die every day around the world from a wide range of causes. Yet a large number of these deaths are easily preventable. This is the case in many countries as people, many of them children, lose their lives to diseases that have ameliorative or curative vaccines. The distribution of vaccines is crucial, especially to places with populations that are vulnerable to these diseases.

Developing countries and those that have been in prolonged conflicts often have populations with limited access to clean water, appropriate shelter, and other factors that exacerbate their susceptibility to disease. Various global organizations are determined to make vaccinations—among many other medical services—available to those who are most in need. It is important to examine the efficacy of these organizations in trying to understand why there still remain numerous cases of disease outbreaks despite the availability and active, thoughtful distribution of vaccinations.

The World Health Organization (WHO) lists its goals as “…working with countries to increase and sustain access to prevention, treatment and care…and to reduce vaccine-preventable diseases.”1 In November 2018, WHO released its 2018 Assessment Report of the Global Vaccine Action Plan. In it, the organization states, “equity must continue to be a strong driver, to ensure that everyone enjoys the benefits of immunization, particularly the most disadvantaged, marginalized and hard-to-reach populations – including those affected by conflict, natural disasters and other humanitarian emergencies.”2

Yet there remains the question of why certain populations are not vaccinated even when the vaccines are being made available by WHO to these “disadvantaged, marginalized and hard-to-reach populations”.3 To answer this question and explain why WHO is missing the mark in certain countries like Indonesia and Afghanistan with immunization rate goals and disease outbreaks, I argue that the organization is not appropriately viewing vaccination as a risk decision by populations that need to accept the vaccines. Therefore, they are miscalculating or completely disregarding the importance of various aspects of risk decisions such as values, ideas of rationality, and risk communication.

3 Ibid.

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The Complexity of Immunizations

Active Resistance

Description

The first case study focuses on active resistance to vaccines in Indonesia, based on evidence and anecdotes from Dyna Rochmyansingh's article in Science Magazine. Indonesia has exhibited a notable drop in immunization rates for measles and rubella. People in Indonesia are refusing the new measles-rubella (MR) vaccine because the country's principal Muslim clerical body (the MUI) labeled it “haram” (forbidden under Islamic law). Islam—the majority faith in the country—forbids pig parts and the official vaccine did indeed include some pork elements in its creation.

The effects of not receiving the MR vaccine are numerous. Rubella infections during pregnancy can lead to birth defects as well as miscarriages. Contracting “…measles can cause deafness, blindness, seizures, permanent brain damage, and even death.” The minimum population coverage for measles and rubella vaccinations needs to be 95 percent and 80 percent respectively to achieve “herd immunity” which protects the entire population. Yet, some of the Indonesian islands only have 68 percent coverage for children and the worst regions have coverage as low as 8 percent. Although the first phase of rollout of the new MR vaccine in Indonesia was successful, WHO now faces an extremely difficult challenge in their aim to rid the world of measles and rubella by 2020 because of the original declaration by the MUI.

Analysis

As the top Muslim clerical body in the world's largest Muslim-majority country, the authority of the MUI cannot be understated. In a country where the majority of the population is of the Islamic faith, understanding the consequent values is paramount.

Risk communication was rendered obsolete in this case because once the MUI labeled the vaccine “haram,” the most sacred value that supersedes any others was addressed. Therefore, the MUI statement issued later allowing the vaccine saying, “trusted experts have explained the dangers posed by not being immunized,” had no effect in leading to vaccinations. A future fatwa by the MUI labeling the vaccine “halal” may not even completely solve the problem. It is entirely plausible that people would be skeptical of a reversal from the MUI and reluctant to participate in an act that would possibly compromise their faith. Evidence already shows, as seen in the resistance to the vaccines in North Sumatra, people are more willing to risk their health and the potential effects of these two diseases than they are willing to risk not keeping halal. This situation suggests that WHO does not understand the importance of values (especially sacred ones) in risk decision-making.

Intervention

WHO now faces a long-term approach to eradicating measles and rubella in Indonesia. There is a real need for comprehensive awareness on the vaccine creation process. While the MUI deemed the vaccine “haram,” clerics in other Muslim countries have cleared it as “halal” because the pork gelatin is purified under an Islamic legal concept called “istihalah.”

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5 Ibid. 629.
6 Ibid. 628-629.
7 Ibid 629.
8 Ibid 628.
9 Ibid 628.
10 Ibid 629.
the MUI to come to this same conclusion would require education from WHO. A Muslim pediatrician in Jakarta, Arifianto Apin believes that, “If Muslim parents learn about the diverse legal views within Islam, they won’t hesitate to vaccinate their children.” However, this seems to be quite an optimistic opinion. Values are not usually that amenable. Also, since Apin is a proponent of vaccines, his optimism surrounding future vaccination could have some confirmation bias.

The other option, which does not seek to educate but instead seeks to satisfy the current demand, would require the development of a vaccine without porcine components. This would pose too great of a cost both in terms of money and time investment (six to ten years), especially given that the current MR vaccine was already developed with optimal efficiency and safety. WHO already refused to pursue this course of action.

**Passive Resistance**

**Description**

The second case study is the prevalence of poliomyelitis (polio) in Afghanistan. This case draws on evidence and anecdotes from both the World Health Organization Eastern Mediterranean Regional Office as well as an article in the *New York Times* by Fahim Abed. As with any country there is still some active refusal of vaccines, yet I have chosen to classify this case as passive resistance because the country situation is influenced more by violence and other factors out of the control of the Afghan people.

WHO characterizes polio as “…a highly infectious disease, which mainly affects young children” and in some cases can cause permanent paralysis. The disease has no cure, making it only preventable by immunization, which makes getting the vaccine early in life very important. Afghanistan is the “world’s polio capital” with nineteen cases this year, an increase from the last two years. Major obstacles—such as poverty and Taliban-controlled territories—threaten the mission of eradicating polio.

**Analysis**

According to prospect theory, WHO should value losses more than gains. Therefore, from the reference point of the near eradication of polio, every case of polio is viewed as a loss. By that measure, Afghanistan poses a great threat to WHO’s mission. Not being able to control the circumstances contributing to the conflict in the country, WHO must focus on areas it can control for such as strengthening already successful programs, discussed in the intervention section.

While conditions in the country are not conducive to total coverage for immunizations, there is still resistance to the polio vaccine in places that vaccinators are reaching. There are some similarities with the measles/rubella situation in Indonesia but there are also some notable differences. If we view the action of getting the polio vaccine for your child as a risk decision, for many Afghans living in extreme poverty, the utility of food—an immediate benefit—and other necessities outweigh that of a vaccine that only provides for future, preventative benefit.

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11 Ibid 629.
12 Ibid.
15 Ibid 2.
From a western, detached perspective, one might argue that there are really no costs to being vaccinated, but this is not the reality for many Afghans, especially those living in the Kandahar region. Reluctance to receiving the vaccine stems from a variety of fears and beliefs. “Many families know the Taliban are suspicious of the government vaccination drive, and worry that they will become targets if they are seen allowing the health workers into their homes.” This fear along with superstition, religious concerns, illiteracy, and gender-based cultural norms regarding home visits make distributing the polio vaccine an extremely challenging task for health workers.

**Intervention**

The polio vaccine distribution process in Afghanistan has become very meticulous, even innovative at times. Teams of health workers have employed effective strategies to overcome many of the aversions of the Afghans to getting their children vaccinated. Given the precarious situation in many regions of the country, WHO should offer as much aid and support as possible for the door-to-door style, grassroots efforts going on in parts of Afghanistan like Kandahar. These processes seem to have had success. According to prospect theory, which emphasizes the tendency of decision-makers to be loss-averse, the grassroots vaccination campaign would help WHO avoid losses in the aim of eradicating polio.

In this case, vaccination teams are generally members of the communities they are serving and as a result, they understand the values. Tackling the religious reservations that some have, a religious scholar named Mawlawi Abdul Rashid was a member of one team and he uses logic that coincides with Islamic beliefs to convince families to not reject the polio vaccine. “According to Islam, health is very important, and we can use anything to ensure our health.” This logic is something that WHO could implement in the Muslim-majority country of Indonesia as well.

**Internal Decision-Making Structures of the World Health Organization**

The Strategic Advisory Group of Experts (SAGE), established in 1999, is the principal advisory group to WHO for vaccines and immunization. “It is charged with advising WHO on overall global policies and strategies, ranging from vaccines and technology, research and development, to delivery of immunization and its linkages with other health interventions.”

The 2018 Assessment Report of the Global Vaccine Action Plan, issued by SAGE should demonstrate just how self-aware and self-critical WHO is of its shortcomings in vaccine distribution. The report details the organization’s recognition of areas that require intervention. Measles and rubella are highlighted as diseases that regressed as opposed to progressing in their eradication efforts in 2018. Regarding the organization’s lack of awareness of certain decision science principles, there is also evidence that steps will be made. “A future immunization strategy should place people at its heart... by involving communities in the design...of services, such services are likely to be more sustainable, more acceptable and more appropriate to the needs of those that need services the most.”

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16 Ibid 4.
17 Ibid.
Conclusion
I was only able to focus on small areas of potential improvement in current immunization situations for the World Health Organization in addition to proposing ways to ensure that the progress toward their goal is not reversed. I advocate that social science provisions from disciplines like decision science are not appropriately included by science-dominated organizations like WHO. However, WHO demonstrated that it possesses the necessary quantitative structures and scientific/medical experts to tackle these complex public health issues. Overall, despite my efforts and opinions, one must keep in mind that the global landscape is not static and that groups such as WHO are conscious of this and are self-driven in re-assessing and changing strategies as dictated by events out of their control. Therefore, outside interventions may be suggested and criticisms made but overall, introspection is a crucial component of a successful organization and WHO meets that criteria.
Perceptions of the 2019 Government Shutdown: A Hindsight Bias Study

MILLIE ZHANG

This article analyzes how hindsight bias can be used to understand the general public's response to the government shutdown. To answer this question, I compared the predictions of individuals affiliated with Carnegie Mellon University regarding the threatened government shutdown before February 15, 2019, to the predictions made by the same individuals after February 15 through an initial survey, follow-up survey, and information questionnaire. My results show that the participants’ conjectures of the shutdown could be explained by the “anchor and adjustment” concept related to hindsight bias. Results also revealed that after February 15, participants were more inclined to believe that they could correctly predict events that occurred before they had actually occurred, for instance, that President Donald Trump and his administration would not concede in their efforts for $5.7 billion of funding for the wall on the US-Mexico border on February 15. The participants’ predictions were influenced by their original perception of Trump’s decision-making behavior based on previous encounters with the President's persona on social media platforms and multiple news mediums. This study demonstrates that by utilizing hindsight bias, we can better understand how the general public views political phenomena such as the government shutdown, allowing for the creation of policy that properly represents the people's needs.

Background
The US government had its longest shutdown starting on December 22, 2018, and ending temporarily on January 25, 2019. The shutdown occurred as a result of President Donald Trump and Congress failing to pass federal funding bills, mainly due to the budget fight revolving around Trump’s demand for $5.7 billion to fund a wall on the US-Mexico border. In the weeks following the end of the longest government shutdown in history, another shutdown was threatened for February 15, 2019 if there was no agreement between President Trump and Congress. Many Americans reacted resentfully to this hypothetical future as a result of the shutdown's significant negative impact on different parts of society.

For example, in California, the Joshua Tree National Park closed due to health concerns over overflowing toilets and other safety issues.¹ A quarter of federal employees were either out of work or working without a paycheck. Both Yosemite and Death Valley National Park were vandalized and lacked maintenance.² Members of the Coast Guard were forced to turn to food pantries and donations.³ Unemployment claims by furloughed federal workers increased by

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more than 400 percent in the last week of December 2018. Those who were deemed essential and called back to work did not qualify for state unemployment benefits.¹ Trump advisor Larry Kudlow said that GDP growth would decrease by 0.1 percent.²

With this in mind, the concept of hindsight bias can be used to gain a better understanding of the public’s reaction to the government shutdown and its effects. Research on this phenomenon indicates that the remembered or reconstructed probability of an event will tend to be larger than the probability originally assigned to it if the event is believed to have occurred, and smaller if it is believed not to have occurred.³ In other words, hindsight bias describes the common tendency for people to view events of the past as more predictable than before the events actually took place. This hypothesis can be applied to predictions that the general public made regarding the shutdown, a political event which had a very significant impact not only on the functioning of the US government but also the lives of the American people. Interpreting how hindsight bias plays a role in the public reaction towards the shutdown may help political experts in finding ways to enact legislation that properly caters to the needs and concerns of the people.

I applied the methodology of previous research on the general public’s predictions of important political phenomena and its effects on the country and its population where Baruch Fischhoff and Ruth Beyth demonstrated the impact of hindsight bias on individuals’ memory for the past expectations.⁷ I achieved this by creating an initial survey where I asked individuals to answer questions regarding hypothetical events that could be potential outcomes of the events between January 25, 2019, and February 15, 2019. After February 15 passed, I sent out a follow-up survey, attached with an information questionnaire, to the individuals who took the initial survey, asking the subjects to answer with their best ability as to how they would respond before knowing what happened on February 15.

Methodology
The following is an excerpt from the introduction for the initial survey:

From December 22, 2018 until January 25, 2019, the US government had its longest shutdown in its history. If there is no agreement between President Donald Trump and Congress, shutdown is threatened for February 15, 2019. The following questions ask for your prediction of what will happen. Please give the probability that you think that each will happen.

Participants answered questions 1, 2, 4, 5, and 6 on a scale coded from 1 to 5 with 1 being “not likely” and 5 being “very likely”. For questions 3, 3a, 3b, 3c, and 3d, the participants had the choice to answer “yes,” “no,” or “maybe.”

The questions are listed below:
1. What is the probability that a government shutdown will occur on February 15, 2019?
2. What is the probability that President Donald Trump will get $5.7 billion funding for the proposed border wall before February 15?
3. Do you think that the President and the Democrats will successfully find a compromise to end the government shutdown?
   a. If they do, do you think Speaker Pelosi will cave to President Trump’s demands as it may be the only way to prevent Americans from suffering more from the

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⁷ Ibid.
government shutdown?  
b. If they do, do you think President Trump will cave to the Democrats’ proposal as polls show that many blame him for the negative impact brought by the government shutdown?  
c. If they do, do you think the Senate Republicans will cave to the Democrats due to potential political costs from the government shutdown?  
d. If they do, do you think it was made in exchange of funding for the wall for codified protection of DREAMERS?  

4. What is the probability that President Donald Trump will declare a national emergency in order to get the required funding for the proposed border wall?  
5. What is the probability that Congress will pass a bill that President Trump will veto, leading to an eventual government shutdown?  
6. What is the probability that Congress will successfully produce a bill that, not being vetoed by the President, will mean that Republicans have to vote against the President?

Information Survey (in follow-up)  
On February 20, 2019, I sent out a follow-up survey, with two parts. The first asked participants to recall their original predictions, as best they could. The following is an excerpt from the introduction for the first part of the follow-up survey: 

About a week ago, you completed a survey asking you to predict what would happen with respect to the threatened government shutdown. My research project is focused on how well people remember predictions that they have made. With that in mind, I would like you to fill out the same survey that you completed last week, giving the same probabilities that you gave then, as best as you can remember them. If you cannot remember what you said, give your best guess.

The second part had an information questionnaire, asking what they believed had happened for each event. It read:

Answer with what you think happened for each of the events described above in the survey, recognizing that some were better publicized than others. Beside each possible situation, you will find the following possibilities: (A) I believe that the event occurred and was publicized, (B) I believe that the event did not occur, (C) I believe that the event occurred and was not publicized, (D) I don’t know.

The questions in the Information Survey focused on the 10 hypothetical event outcomes presented in the initial survey.

Participants  
Participants for the survey were recruited through methods that included email lists of undergraduate and graduate students majoring in International Relations and Politics (IRP) and faculty of the Institute for Politics and Strategy (IPS) at Carnegie Mellon University. Additionally, I posted the survey in the Facebook groups for the Carnegie Mellon University Class of 2021 and for the Carnegie Mellon University Class of 2022. Forty-five individuals participated in the initial survey, while thirty responded to the follow-up survey. The majority of the participants were comprised of students along with one IPS faculty member.

Results  
Table 1 describes the participants’ predictions of specific events regarding the government shutdown that could take place. Questions 1, 2, 4, 5, and 6 were close-ended, with a scale from “1 as not likely” to “5 as very likely” for the possible answers that participants could give. From the results of the surveys, there are some key takeaways.

Before getting into what I was able to take away from the results of the surveys, I will explain how I was able to recognize the presence of hindsight bias in the participants’ projections. The
type of response pattern we would expect if hindsight bias was involved in the individuals’ predictions is as follows: the participants’ predictions after February 15 regarding the probability of an event for the government shutdown that actually occurred should be higher than their predictions of the event’s likelihood of taking place before February 15.

Table 1:

<table>
<thead>
<tr>
<th></th>
<th>Initial Survey: Prediction</th>
<th>Follow-up Survey: Remembered Prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 (not likely)</td>
<td>2</td>
</tr>
<tr>
<td>Q1</td>
<td>4.4%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Q2</td>
<td>42.2%</td>
<td>44.4%</td>
</tr>
<tr>
<td>Q4</td>
<td>2.2%</td>
<td>17.8%</td>
</tr>
<tr>
<td>Q5</td>
<td>6.7%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Q6</td>
<td>15.6%</td>
<td>17.8%</td>
</tr>
</tbody>
</table>

Table 1 demonstrates that in Question 1 of the initial survey, the participants believed that the possibility of another government shutdown was possible as 64.4 percent answered that this event was likely (4) or very likely (5). After February 15, this percentage dropped to 27.6 percent while 48.2 percent remembered predicting that another government shutdown was somewhat unlikely (2) or not likely (1). Compared to the initial survey where only 13.3 percent of participants remembered having predicted correctly that another government shutdown was unlikely, this change in event predictions demonstrates that a number of individuals believed they had been able to predict that event correctly after the fact. Taking this into consideration, it is clear that hindsight bias is very much a major component in explaining why some participants responded in a different way for the follow-up survey than they did for the initial survey.

Table 2:

<table>
<thead>
<tr>
<th></th>
<th>Initial Survey</th>
<th>Follow-up Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Q3</td>
<td>20%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Q3a</td>
<td>11.1%</td>
<td>73.3%</td>
</tr>
<tr>
<td>Q3b</td>
<td>15.6%</td>
<td>42.2%</td>
</tr>
<tr>
<td>Q3c</td>
<td>35.6%</td>
<td>20%</td>
</tr>
<tr>
<td>Q3d</td>
<td>24.4%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Questions 3, 3a, 3b, 3c, and 3d were also close-ended, but the answers given were “Yes”, “No”, and “Maybe”. Unlike the results shown in Table 1, the results for the questions in Table 2 appear, for the most part, to not have a strong presence of hindsight bias as much of the responses to the initial survey remained, demonstrating little change in the follow-up survey. Question 3d is the only exception where the percentage of participants who answered
“No” to the suggested event in the initial survey increased by 31.7 percent in the follow-up survey. As there was no exchange made of funding for the wall for the codified protection of DREAMERS, there may have been some hindsight bias in the participants’ decision to respond the way they did.

Table 3:

<table>
<thead>
<tr>
<th>Information Survey</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event 1</td>
<td>3.3%</td>
<td>90%</td>
<td>0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Event 2</td>
<td>3.3%</td>
<td>83.3%</td>
<td>0%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Event 3</td>
<td>46.7%</td>
<td>30%</td>
<td>13.3%</td>
<td>10%</td>
</tr>
<tr>
<td>Event 4</td>
<td>0%</td>
<td>83.3%</td>
<td>0%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Event 5</td>
<td>10%</td>
<td>56.7%</td>
<td>20%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Event 6</td>
<td>16.7%</td>
<td>53.3%</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Event 7</td>
<td>0%</td>
<td>66.7%</td>
<td>3.3%</td>
<td>30%</td>
</tr>
<tr>
<td>Event 8</td>
<td>86.7%</td>
<td>3.3%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Event 9</td>
<td>3.3%</td>
<td>76.7%</td>
<td>3.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Event 10</td>
<td>6.7%</td>
<td>53.3%</td>
<td>10%</td>
<td>30%</td>
</tr>
</tbody>
</table>

The results of the information questionnaire demonstrate the relationship between the participants’ knowledge of whether or not the proposed scenarios for the shutdown took place after February 15 and the participants’ predictions of those events in both the initial and follow-up surveys. For example, according to the results for Question 1 of Table 3, 90 percent of the participants who took the information survey believed that a government shutdown occurring on February 15, 2019, did not take place. This helps explain why the 48.2 percent of respondents mentioned previously who predicted that the event was unlikely in the follow-up survey answered the way they did, taking into account the effect of hindsight bias on the participants’ responses to the surveys.

**Discussion**

Remembering how one predicted an event's outcome can be biased as demonstrated from the results of this study. This may be due to the hindsight bias-related concept of judgmental “anchoring and adjustment” as asserted by Fischhoff and Beyth. According to the authors, the anchor is “a natural starting point used as a first approximation to the judgment. The anchor is then adjusted to accommodate the implications of additional information.”

These concepts can be applied to the predictions made by those who answered the surveys regarding the event of the partial government shutdown as well as the potential of another on February 15, 2019. Unfortunately, however, the results of this study were also influenced by the fact that not all subjects who answered the initial survey responded to the follow-up survey. In addition, the sample size of participants was relatively small. With this in mind, I was able to make the following conclusions from the predictions before and after February 15 regarding the administration’s decisions in resolving the government shutdown.

An interesting finding from the survey responses is that those who completed both the

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8 Ibid.
initial and follow-up surveys seemed to be more confident in their beliefs that the Trump administration would not cease its demands for $5.7 billion and come to a compromise reasonable in the sense of the alignment of political interests between the Republican and Democratic Parties. This is the case for the hypothetical outcome regarding the exchange of codified protection of DREAMERS for funding for the wall as the percentage of those who did not think this was a truly possible outcome was higher in the follow-up survey (51.7 percent) compared to that in the initial survey (20 percent). Additionally, I found that despite the fact that President Trump declared a state of national emergency in the United States on February 15 there were still some individuals that either did not know whether Trump had declared a national emergency (10 percent) or thought that the event had not occurred (3.3 percent) as represented in the information questionnaire responses.9

The “anchor” in this situation can be perceived as the original impression of President Trump’s demeanor and approach to handling policy issues. This is established from the numerous instances in which Trump stirred public disapproval. These circumstances include the President’s adamance in the creation of a wall at the US-Mexico border - the cost of which can range from $8 billion to $12 billion for just half the length of the border - as well as Executive Order 13769 (otherwise known as the “Muslim ban”) which was contested regarding whether or not it was constitutional through the US court system.10 This “anchor” of judgment is then adapted to fit the new information to make a prediction as demonstrated by the individuals who had taken the surveys for this study. This adjustment can be made as a result of making presumptions as to how President Trump would react in certain situations based on his social image and persona.

Further research into the public’s predictions of political phenomena such as the government shutdown through concepts like hindsight bias can help explain the general public’s level of political participation as well as find solutions to resolving issues such as political apathy and disinformation that have made predictions more difficult. This can also help politicians enact policy that better fits the needs and concerns of the people. When I implemented this study, I understood that my research was limited by the fact that not all of the respondents who answered my initial survey participated in the follow-up survey and information questionnaire as well as the fact that my sample size was small. However, this could be a start to a larger project, which could help politicians and political scientists better understand the American people.


The United States sees itself in a national crisis in regard to the opioid epidemic. Each day, over 130 people die due to an opioid overdose, and it costs the United States over $78.5 billion each year.¹ Most of the people becoming addicted are being prescribed these medications by their own physicians to treat acute and chronic pain, and not being made aware of the potentially deadly symptoms that could come from this. This article focuses on the FDA and how they can take preventative measures towards this epidemic. What should the standards and regulations be for the FDA to approve opioid drugs? Once a drug has been approved for release, how can the FDA properly convey the risks and benefits to physicians, consumers, and the public? We must identify the line between unacceptable and acceptable risks and communicate them in order to reduce the abuse occurring with these prescription drugs.

Description
In the 1990s, pharmaceutical companies reassured physicians that patients would not grow dependent or addicted to opioids. As a result of this misrepresentation, physicians began prescribing these medications at exponential rates.² Currently, over 130 people die from opioid overdose every day, and approximately 11.5 million people have used these medications for unintended purposes.³ The Department of Health and Human Services has declared a public health emergency, thus implementing prevention measures.

In 2007, President George W. Bush signed the Food and Drug Administration Act of 2007 which granted the FDA an expansion on their tools and abilities for drug safety authorization. As the opioid epidemic continued to grow, the FDA responded in different ways. Back in 2011, the FDA required manufacturers for certain drugs to provide a Risk Evaluation and Mitigation Strategy (REMS), to demonstrate that the benefits of the drug would outweigh the risks.⁴ Within the years that the REMS policy was enacted, other methods were tested to assess the risk of allowing opioids into the market. During the years of 2007–2011, the FDA members of the Drug Safety and Risk Management Committee (DSaRM) began to hold joint meetings to discuss approval of new drugs. Research had shown that there had been a significant increase

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in meetings between the DSaRM and the FDA in the years following the enactment of the FDAAA. Further research also showed that opioid specific drugs that were “isotretinoin-containing” – a drug used to treat severe acne – were being reviewed as many as ten times during these meetings, which was a hopeful step in the right direction.\(^5\)

The increased number of meetings, coupled with the earlier involvement of risk management in drug approval discussions, were all victories that came about from the DSaRM joining forces with the FDA. However, while these changes should have produced some improvement, opioid related deaths were continuing to rise. The research conducted by DSaRM studying the effects of pre versus post FDAAA meetings showed that while these meetings were occurring more frequently, and with potentially more informative substance, the FDA had not changed the ways in which these topics were being viewed and more importantly, how they were being voted on.

**Analysis**

Following the FDAAA solo and joint meetings with the DSaRM, the findings were that rather than more thoroughly incorporating the risk discussion points when reviewing drugs (as anticipated), the FDA would resort to merely including additional warning labels on the drugs, amongst a few other subpar resolutions. This presents an array of issues with how the FDA chooses to present these risks to physicians and patients.

All medications have warnings, from Advil for small aches, to antibiotics for fighting infections, to highly addictive opioids. How is a patient supposed to discern what label warnings to merely glance at, or actually pay close attention to? For over-the-counter drugs, it may seem like an obvious response that most people will only briefly skim warnings, if that. Doctor prescribed medications are trickier and arguably more important when determining warning labels since risks for these medications can be much more costly or frequent in nature.

In the case of medication such as antibiotics, doctors prescribe them even when a patient’s illness does not call for it. The doctors approach antibiotics with a “why not take the risk” attitude. This, in addition to other factors, contributed to the rise in antibiotic resistance as seen in the public.\(^6\) If doctors are responding this way, then how are patients going to respond? This anecdote demonstrates that even with higher risk drugs (i.e. antibiotics) the sentiment doctors and patients seem to share is lackadaisical, despite warnings. This attitude could be incorporated in doctors’ warning speeches to patients if they are prescribing a more addictive drug, such as opioids.

While doctors understand the addictive nature of opioids, communication to the patient may not always be clear. In order to combat this, the FDA should incorporate some sort of “eye-catching” label when presenting their warnings on opioids. By visually drawing more attention to the warning and subsequently, the contents of it, it can serve as a reminder for both the doctor when citing risks to the patient and to the patient every time they go to take their dose of the medication. As it turns out, the FDA came around to incorporating these labels for a few classes of strong drugs, and tested the results.

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Back in 2005, the FDA implemented a “black box warning label” on all atypical antipsychotic drugs, as many older adults suffering from dementia had been overdosing or misusing the drug, causing death.\(^7\) Years later, the FDA decided to bring this warning to all antipsychotics, both atypical and typical/conventional. The decision to place these labels on both types of antipsychotics was supported after the findings of two observational epidemiologic studies. The results showed that including these warnings did in fact have an effect of decreasing deaths related to the misuse of the drug and found that the main cause of death amongst these “new” users was due to cardiac arrest or an infection unrelated to the drug. Results also occurred with prescriptions for pregnant women, as doctors would become more aware of the possible effect’s drugs might have on the woman and baby.

While the results of including “black box warnings” on the previous medication proved to be successful, this is not always the case. Many studies of the effects of the “black box” have showed no causal relationship between drugs that include the label and changed behavior by the recipient. A study which looked at the effect of the “black box warning” on antidepressants showed that there was no evidence of increased suicidal behavior amongst those who had the “black box warning” drug.\(^8\) However, this does not just stop at patients – according to research by Amy Karch, many prescribers would ignore the warnings, up to nearly 50 percent of the time.\(^9\)

A group known as Physicians for Responsible Opioid Prescribing came about with a mission to reduce the mortality rate from opioid addiction and to practice responsible prescription methods. They also contributed to the labeling of opioid medications. The group proposed that opioid medications used for acute, moderate/mild and non-cancerous pains should be labeled differently than those for severe pain.

There have been many efforts towards giving more attention to the risks and benefits of opioids, as well as finding a “best method” for presenting given risks to the public. The different decisions have led to varying results. The case of “black box warning labels” shows promise, especially when used with more “sensitive” patients (i.e. the elderly, pregnant women), but there is still work to be improved upon.

The FDA exhibits a “nested cycle” – essentially working within itself to complete a larger purpose in its decision-making process for the approval of highly addictive and adverse drugs. In this cycle, after the results of the DSaRM meetings, the FDA decided to implement their version of an “intervention” such as testing new methods of caution to the public by employing more warnings and by using a more visually eye-catching warning for those drugs of higher risk, (along with more detailed precautions/instructions for doctors and physicians).

**Intervention**

There are additional interventions that could potentially show results with respect to the epidemic. First would be the usage of cohesive risk assessment language on these drugs. Second, I propose a new way for the FDA to view the impacts these drugs have on people by pointing out a flaw in their current risk assessment framework.

The ability to correctly interpret risk assessment language has been examined by decision sci-

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entists over the years. The way in which one person would describe an outcome as “very likely” could be misconstrued in a variety of different ways. For example, Company A can present Drug A with a “somewhat unlikely” risk of addiction whereas Company B could present Drug B with a “not probable” risk of addiction which could cause a huge outbreak of addiction and side effects that the consumer (or FDA when approving), could not have considered due to the “improbable” risk of that occurring. There is no way for the FDA to be able to compare all these drugs with such different means of communication. There is no scale, there is no comparable statistic, these words are just words to be interpreted at the discretion of that particular person or group reviewing the conditions. This problem can be best explained by the following quote: “‘Likely’ might mean ‘40 [percent]’ to one person and ‘70 [percent]’ for another, who would use ‘probable’ for the same expectation.”

For the FDA, this must be a very prominent issue seeing as how there are thousands of pharmaceutical companies producing drugs, and only one FDA. It is understandable that there would be communication differences from one company to another. However, it should be the responsibility of the FDA to help develop a cohesive and uniform risk assessment matrix/language usage that can be adapted for all the drug companies.

Another way to approach this is the FDA could also require that all pharmaceutical companies quantify their risk assessment into probabilities versus verbal quantifiers. It can be much easier to tell apart a 70 percent versus a “likely” over “probable”. However, it may take time for this to actually become a set standard, since people prefer to express themselves verbally than with numeric quantifiers. In addition to this complication, although numerical quantifications are objectively easier to discern than verbal, you still need to have a scale for them as well – how does that scale get determined? Obviously a 70 percent chance versus a 75 percent is a lower probability, but how much lower? Does that 5 percent difference really matter? And if it does, how are the lines drawn from a low, medium, or high probability? None of these are easy questions with simple solutions, however implementing a cohesive system could serve the FDA well, and would add much more insight into their processes and decision-making than what they have now.

An example of a drug review that could have benefitted from a more cohesive system is Zohydro ER, an opioid that was manufactured for chronic pain as well as an alternative to other opioids for patients that do not respond well to other types. Despite a vote of 11-2 against the drug from the advisory board, the FDA still released it into markets. However, this drug proved to be more problematic than beneficial to the public. Critics of its release blamed it for increasing addiction rates due to the ease of being able to crush the pills to snort or inject and henceforth, continuing to add to the rise in the misuse of opioids. Had there been a cohesive system to rate these drugs, the FDA could have compared it to another similar opioid and potentially noticed that the risks of this opioid would outweigh the benefits.

The second proposed intervention that could be beneficial for the FDA to consider, is to reassess the network used to assess how the risks of opioids will affect the public. Currently, the FDA is “patient-centered”, and their system of analyzing risks is a direct relationship from A to B. Figure 1 shows a simple, but comprehensive visual of what comprises the current network.

11 Ibid.
that the FDA considers when they do their risk analysis. Not examining the indirect effects of these medications means not thoroughly analyzing the costs for allowing these medications onto the market. Figure 2 is the framework that was considered as a model to assess the cost and benefits of opioids:

Figure 1:

Figure 2:

<table>
<thead>
<tr>
<th>Decision Factor</th>
<th>Evidence and Uncertainties</th>
<th>Conclusions and Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Treatment Options</td>
<td></td>
<td></td>
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<tr>
<td>Benefit</td>
<td></td>
<td></td>
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<tr>
<td>Risk</td>
<td></td>
<td></td>
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<tr>
<td>Risk Management</td>
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</tbody>
</table>

While this model is not inherently bad, it does little to provide any assessment of the indirect effects. The National Academy of Sciences (NAS) acknowledged that this model can (and should) be modified to incorporate public health factors when reviewing opioids. This distinction is especially important because opioids, unlike the other medications this framework was intended to analyze, not only help to alleviate pain the patient is feeling, but in addition it causes feelings of “…pleasure, relaxation and contentment.” As a result, these medications are often key items sold on the black market or by street drug dealers.

In the framework above, there is not a defined area which tries to imagine unintended consequences, such as how releasing these drugs could add to illegal profits, how this could be a gateway for people into the drug dealing business, or on a larger scale how the actions of these people affect their family and loved ones. As stated by the NAS, “weighing benefits and risks in this context requires a decision-analysis framework that can adequately capture the dynamic interrelations among the many variables involved,” due to the direct and indirect effects opioids can have on the patients and third parties. As noted in the NAS report, the FDA should

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consider implementing this intervention in a transparent and integrated way so the decision-making process is more fluid, hopefully leading to change.

**Conclusion**

The addiction, abuse, and dependence produced by the opioid epidemic and the way it has affected America, is an issue that has become increasingly fatal. After my internship with the Department of Health and Human Services, I gained a great interest in this epidemic and became curious of factors that are contributing to the exponential rise of deaths related to opioid misuse. A description, analysis, and intervention, demonstrate where miscommunications on the part of the drug companies and FDA could be contributing to the abuse of opioids. Potential policy solutions were then presented.

The implementation of REMS and involvement of the DSaRM are both vital components to the steady progress the FDA has made toward combatting the epidemic. In addition to these two interventions, the “black box warning labels” provided another step in the right direction, by addressing the critique that warnings on opioids were not “eye-catching” enough. While this proved to be more effective for sensitive patients such as pregnant women and the elderly, it still did show improvement and I believe can be taken further so that its success can be uniform across medications targeted at all populations.

My own proposed interventions offered two ways to review certain policies that could potentially be useful to the FDA. The first intervention was to target the risk assessment language difference between all pharmaceutical companies and the FDA. Binding this bridge with a cohesive language framework or quantitative scale will help the FDA have a uniform system for approving all drugs. The second of the proposed interventions was for the FDA to re-evaluate their risk framework of which seems to be lacking the indirect risks of opioids out in the market. The FDA does take into consideration the A to B relationship of the drug, however they do not consider the indirect effects.

These interventions cannot be instituted overnight. Yet I believe that we can get to a place where the FDA implements better policies for opioid and other types of drugs from the interventions discussed in this article, including those proposed by myself, other scholars, and those in the agency already. There have already been small steps to remediating this epidemic. However, opioid abuse is a high-speed moving train that will be difficult to stop. With the right elected politicians and with influence from the public, hopefully we can see a better decision-making process within the FDA to combat this major crisis happening in our country.
Immigration is on the forefront of modern day US politics as the country struggles to address its relationship with Mexico, as well as its commitments to refugees. Many historians locate key elements of immigration policy in the legislation itself. Yet what is omitted from the legislation is just as important as what is included. In other words, the official immigration policy, or what historians refer to as the “front door” to the United States, was actually shaped by allowing immigrants in from the “side door” and the “back door.”1 These alternative doors allowed immigrants to circumvent the main door to the United States, shape the demographic of the country, and set a precedent for allowing certain immigrant groups into the country that would later be legitimized in formal immigration policy.

Critics might contend that these alternative doors could not have been major influences in immigration policies because they were not important enough to be legitimized as the official policy of the United States. However, this viewpoint overlooks the fact that racial, economic, and political distinctions embedded in some immigration policies have been shaped through the alternative doors. As a consequence, many policies had to be put into effect in order to address the immigrants who entered the United States through these alternative doors. In short, the unintended consequences of these decisions drove the official immigration policies of the United States.

**Back Door**
The first alternative door was the Bracero Program, which was established in order to provide the United States with cheap immigrant labor. Scholars refer to the Bracero Program as the back door due to Mexico’s geographic position and the established history of illegal Mexican immigration.2 The Chinese Exclusion Act of 1882 ended Chinese labor in California, and southwestern property owners were in dire need of a cheap labor force.3 American employers soon looked toward their regional neighbors and saw the ideal labor replacement in Mexicans. The Bracero Program was signed between the United States and Mexico as an agreement that allowed contract laborers to work on farms in the southwest.4 Through the Bracero Program,

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the southwestern property owners contracted cheap labor and replaced these laborers when the contracts expire.  

By the 1940s, Mexican laborers dominated up to 85 percent of the work force ranging from plantations to railroad work. By some might contend that a similar racial identity was the motivation behind importing the Mexican labor force, this would be inaccurate as Americans viewed Mexicans as individuals with “85 percent Indian blood.” Furthermore, the fact that the United States had deported ethnic minorities only to hire more minorities for the same work, points to non-racial explanations behind hiring Mexicans. The explosion of Mexican laborers would subsequently expand Latino influence in both political and cultural spheres in the United States.

An anti-immigration Congressman described the Bracero Program as a back door that circumvented the front door of the United States when he stated, “What is the use of closing the front door to keep out undesirables […] only to allow Mexicans to come in by the backdoor?” According to this view, the official immigration policy was outweighed by the effects of the back door. At the same time, restrictionists warned southern policy makers on the dangers of the increasing Mexican population as every Mexican child born in the United States would be able to vote. These policy makers’ concerns came to fruition. The increased Latino population strengthened their influence in American politics by forming lobbying groups and launching cultural movements that catered to the needs of Mexican Americans and thus shaped the official immigration policy.

The Latino population increase strengthened the Latino special interest group within what Daniel Tichenor calls an “iron triangle”. The iron triangle refers to three factors: special interest groups, Congress, and the bureaucratic system. Special interest groups would influence Congress by supporting certain members in exchange for their support behind the special interest group’s agenda. Thus, the Latino population became a force to be reckoned with in American politics between the 1960s and the 1970s in setting future immigration policies.

Subsequent legislation reflected newfound influence by immigrants that came in through the back door. The signing of the Immigration Reform and Control Act of 1986 (IRCA) signaled an official recognition of the American dependence on immigrant labor by being passed off as a symbolically restrictionist bill, yet in reality it continued to allow contract immigrant labor. IRCA also legalized illegal immigrants who entered prior to 1982, which would drastically change the demographic makeup in the United States. While politically symbolic of regaining US borders, IRCA had little effect on the actual immigration flows since it had established the H-2A visas, which allowed special agricultural workers (SAWs) to work in the United States. The H-2A visa still exists in the modern immigration policy of the United States for “foreign agricultural workers with job offers from US companies” and “US companies hiring

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5 Ibid.
6 David G. Gutiérrez, Walls and Mirrors: Mexican Americans, Mexican Immigrants, and the Politics of Ethnicity, 45.
7 Ibid 47.
8 Ibid 52-53.
9 Ibid 55.
foreign workers to perform agricultural labor or services of a temporary or seasonal nature.\textsuperscript{13} The recent proposal known as the Dream Act also reinforced the notion that immigration policies reacted to the effects of immigrants who were already in the United States. The Dream Act was a failed bill that would have granted legal status to undocumented immigrants who were brought to the United States as minors.\textsuperscript{14}

\textbf{Side Door}

The side door to the United States was the parole system used by the executive branch to admit Hungarian refugees escaping from communism. The new side door allowed immigrants to circumvent obstructions from previous immigration policies, such as national requirements, economic statuses, and racial makeup. In the 1950s, the Eisenhower administration wanted to reduce tensions in US-Soviet relations but also wanted to fulfill its mission to contain communism. The administration saw accepting Hungarian refugees as a suitable course of action, where the United States would not antagonize the Soviets while reinforcing its political stance against communism.\textsuperscript{15} The program was revolutionary in its focus on admitting immigrants out of foreign policy and political concerns as opposed to national quotas or economic reasons.

The parole system was also unique in its prioritization of speed over security. In a notable example, refugees were admitted within four days—starting from when a refugee first queued up at the US embassy in Austria to physically stepping foot into the United States.\textsuperscript{16} The mass amount of parolees had also demonstrated the powers of the executive branch as the Eisenhower administration admitted forty thousand Hungarian refugees in one year.\textsuperscript{17} The Immigration and Nationality Act of 1965 was a direct result of the parole system as it abolished the national origins system of the 1920s and included a category for refugees escaping from communism. The act was also an attempt to check the powers of the executive branch to parole refugees.\textsuperscript{18}

Both the provision of admitting refugees and the influence of the executive branch exist in the modern immigration policy of the United States, as the president now determines the annual quota for refugees with Congress.\textsuperscript{19} The category of refugee can still be seen in the official US immigration policy today. The modern designation, however, has expanded to include social, racial, religious, and political persecutions.\textsuperscript{20} As the side door to entering the United States, the parole system would go on to shape future policies by incorporating provisions that addressed refugees fleeing from persecution.

\textbf{Conclusion}

The establishment of alternative doors was advantageous for the United States because these entrances provided solutions to issues the official policy could not solve. From a political per-
spective, President Johnson cited the restrictive immigration measures of the United States as detrimental to the country’s “Cold War mission.” Furthermore, then secretary of state Dean Rusk also testified that the national origins system was “indefensible from a foreign policy point of view” and that the “repeated passage of ad hoc laws to intervene in refugee crises, family reunion cases, and backlog cases demonstrated that both Congress and the country were ready for a less discriminatory immigration policy.”

The aforementioned ad hoc laws were precisely the alternative doors through which Hungarian refugees and Mexican laborers passed through. Historian Maddalena Marinari stated that the Johnson administration’s proposal was focused on moving away from “ad hoc legislation and executive parole power.” The driving influence of the alternative doors was emphasized by Marinari as the new administration’s response centered around addressing refugee needs (driven by the side door) and changing labor needs (driven by the back door). If the president had not invoked the powers of the executive office, refugees fleeing from communism would still be blocked by the official immigration policy. This outcome would have undermined the US commitment to Cold War efforts. In short, the parole system provided a side door for the refugees to enter the United States when the main doors would have obstructed them, and therefore had allowed the United States to fulfill its Cold War commitments.

The establishment of alternative doors for immigrants to enter the United States was a crucial decision that shaped subsequent US immigration policy. The legacies of the alternative doors can still be seen in the provisions embedded within the modern-day official immigration policy of the United States. While these alternative doors were initially intended to provide efficient solutions to economic and political issues, the immigrants who had entered from these doors were able to force Congress to address the perceived shortcomings of the official immigration policy. The official immigration policies were reacting to the effects of the alternative doors. Political scientist Aristide Zolberg used a similar concept, known as the “feedback effect,” to emphasize the effects of new German Americans influencing naturalization policies by acting as a voting bloc. The notion of similar feedback loops reinforcing and magnifying immigration issues throughout American history was evident in the case of Mexican and Hungarian immigrants. Ultimately, the decision to allow alternative side doors has led to the current immigration policy.

22 Ibid, 226.
23 Ibid, 224.
The Controversial Issue of Comfort Women Between Japan and South Korea

Karline Jung

The History of Comfort Women

The issue of comfort women is a decades-long conflict between South Korea and Japan. Comfort women is the term used for the one hundred thousand to two hundred thousand women who were forced into sexual slavery by the Imperial Japanese Army before and during World War II. These women from South Korea, China, the Philippines, Singapore, and Malaysia, were forced to endure working in brothels for Japanese military troops either through enslavement or the deception of job offers. The surviving South Korean comfort women have become prominent figures in Korea for bringing this issue to light and sharing their stories since the early 1990s.

Despite the momentum the comfort women issue gained since the 1990s, there have been numerous controversies concerning past apologies from the Japanese government. In 1993 the comfort women received their first official apology from the Japanese government through the Kono statement, which acknowledged that Japanese military troops were involved in the recruitment of women for military-run brothels, where women were forced into sexual slavery. From this point on, there were other official apologies such as the Murayama statement in 1995 and the Koizumi statement in 2006. Yet Japan’s right-wing nationalists opposed these statements, causing mistrust and hostile relations between Japan and South Korea. In his 2015 statement, Japanese prime minister Shinzo Abe issued a statement respecting the previous apologies and expressing his apologies, but many in China and South Korea remained distrustful in that he repeated phrases from the Murayama and Koizumi Statements and did not explicitly give an apology regarding the issue.¹ In December of 2015, then South Korean president Ms. Park Geun Hye and Prime Minister Abe came together to discuss and resolve the comfort women issue.

The 2015 Agreement

The core of the comfort women issue today pertains to the 2015 agreement. In December of 2015, Prime Minister Abe and President Park Geun Hye signed an agreement to resolve the comfort women issue. The agreement consisted of a sincere apology issued by Japan, a lump sum contribution of one billion yen (about 8.3 million USD) from the Japanese government’s national budget to a foundation created by the South Korean government to support


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the victims, and the condition that this issue be a “final and irreversible resolution.” The 2015 agreement has recently resurfaced following the impeachment of former South Korean president Park Geun Hye in 2017 and has faced increasing resistance from the South Korean general public and the comfort women who assert that the agreement is invalid. As the issue gained momentum, the current South Korean president, Moon Jae In, pledged to review the 2015 agreement during his candidacy, emphasizing this as a human rights issue where the agreement was established without the presence and approval of the comfort women. Since 2018, the South Korean government supports the South Korean general public and comfort women on the grounds that the comfort women were unaware of and had no involvement in the agreement and that their interests were not sincerely taken into consideration. As of now, Japan and South Korea are at a standstill and it is unclear as to whether the 2015 agreement will be revisited.

The South Korean Government

Since the impeachment of the former South Korean president in 2017, the South Korean government has faced increasing pressure from the general public, comfort women, and media. Since the comfort women were uninformed and uninvolved in the agreement, many see the 2015 agreement as not only the fault of the Japanese government, but also the fault of the South Korean government during Ms. Park Geun Hye’s presidency. For unknown reasons, the South Korean government under Ms. Park’s presidency failed to inform the comfort women of the agreement and understand their underlying interests. As a result, the general public and comfort women saw this agreement as one that was primarily sought for political gain and bettering Japan-South Korea relations, rather than an actual resolution for the comfort women.

The South Korean government is now attempting to make it clear that the underlying interests of the government during Ms. Park’s presidency and President Moon’s presidency are different. While the Japanese government pressures the South Korean government to stop calling for renegotiation due to worsening relations, the general public pressures the South Korean government to continue calling for justice. The current goal of the South Korean government is to receive a new and sincere apology from Japan and then move towards possibly revisiting the 2015 agreement.

President Moon expressed his support of the comfort women and general public by creating a task force that looked into whether the deal was valid and concluded that it was “seriously flawed” and could not be considered as resolved. President Moon criticized the 2015 agreement as a “political agreement that excludes victims and the public” and one that showed a clear violation of human rights. The South Korean government has also conveyed the weight of this issue by announcing in September of 2018 that they would freeze the funds from the Japanese government to the Comfort Women Fund until they are able to revisit the issue.

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4 Ibid.
The Japanese Government

Following President Moon’s assertions, the Japanese government responded by calling a new apology and revisiting of the agreement as “unacceptable” and the remarks that President Moon has made as “extremely regrettable.” The Japanese government has even gone as far as to say that any attempt to revisit the negotiation could ultimately lead to an “unfavorable impact” on Japan-South Korea relations. The Japanese government asserts that they have already made multiple, sincere apologies in the past and paid part of the contribution towards the foundation. Despite the amount of pressure Prime Minister Abe and the Japanese government are receiving from the South Korean government and South Korean public, they stand by their belief that the agreement is valid, eliminating the possibility of revisiting the agreement due to the clause that states the 2015 agreement is final and irreversible.

The perception of the Japanese government by the South Korean general public and comfort women has grown worse over time due to Japan’s refusal to revisit the agreement, upholding their view that the 2015 agreement was for the Japanese government’s personal gain. Many believe that the agreement was used for political gain, to better the relations between Japan and South Korea and resolve bigger issues, rather than to bring justice to the comfort women. The South Korean government and general public seem to distrust the Japanese apologies due to past controversial statements given by right-wing Japanese nationalists and Japanese Prime Minister Abe, where they questioned whether Japan’s imperial military really coerced Korean women into sexual slavery through aggression. The pressure that Prime Minister Abe faces from the right wing to scrap past apologies also contributed to the skepticism from the South Korean government and general public of the most recent 2015 apology.

The South Korean General Public and Comfort Women

Although the South Korean general public and comfort women are not explicit decision-makers, they do have influence over the decision-making of the South Korean government. The biggest reason for resistance from the South Korean general public stems from the view that the agreement was used as a reciprocal tool by both countries to improve their own relations, considering the many political relations they are involved in. The general public and comfort women stated their dissatisfaction with the Japanese and South Korean governments calling for a “renegotiation,” as that would imply that the agreement was valid at some point. The public and comfort women also view an explicit and sincere apology as a vital part of revisiting this agreement considering the past controversial statements that some Japanese officials have made. The comfort women have stated that their true interests are to receive an official apology and reparations from the Japanese government that they themselves approve of.

Possible Misunderstandings

Two main miscommunications that should be addressed are the miscommunications within the South Korean government and between the South Korean government and the comfort women. In January of 2018, South Korean President Moon announced that while the South...
Korean government expected Japan to take further measures to support the needs of the comfort women, the South Korean government would not be revisiting the 2015 agreement. However, the Foreign Minister of South Korea had stated that the 2015 agreement would not be considered as “a genuine resolution” a few days beforehand. This caused confusion among the general public, which in turn caused President Moon to assert that the deal was flawed and to demand a sincere apology from the Japanese government.

The miscommunication between the South Korean government and the comfort women is a factor in the belief that the agreement is flawed, since the comfort women were unaware of the agreement. When asked what she thought about the 2015 agreement, one of the comfort women, Lee Yong-soo, said “We are not craving for money. What we demand is that Japan make official reparations for the crime it had committed.” This is consistent with one of the findings in “Sacred Bounds on Rational Resolution of Violent Political Conflict,” where the use of material incentives in mending political and cultural conflicts can backfire because it can be seen as undermining sacred values. The comfort women had simply wanted to voice their stories and receive a sincere apology that the Japanese government could reflect on by remembering this event.

**Conclusion**

The difference in perspectives on sacred values seems to be one of the main reasons why both parties cannot agree on how to address this issue. South Korea sees this issue through more of a consequentialist perspective, as they are focusing on the consequences of one's action in determining whether the action was right or wrong. Because both governments ignored the comfort women in reaching their 2015 agreement, South Korea argues the women's rights were violated. Thus the agreement should be revisited in order to restore the rights that were taken away from the comfort women. However, Japan seems to view this issue through a rational actor perspective, in which consistency is focused on, rather than accuracy or social acceptability.

The 2015 agreement should not be considered valid due to the fact that the parties did not include the comfort women in the agreement. Whether intentional or not, the voices of the victims were not heard and acknowledged. The comfort women should have been aware of the agreement and should have been the ones to voice what they wanted from the Japanese government as reparations, rather than the South Korean president. One possible intervention is to have both parties consult with an impartial third party to create a contingency contract or agreement. The need for consultation is a process consideration, which is not represented in both the consequentialist perspective and the rational actor perspective; this could be beneficial in that both parties will need to make an effort to understand this perspective. The Japanese government would have to look towards the choice process, rather than the outcome and the consistency of these choices, while the South Korean government, would have to take both the choice process and the consequences of one's ethical conduct into consideration when
making judgments. Addressing the process issues while building the contingency contract can help rebuild trust in this relationship and hold the other party accountable in the case that the issue arises again.

Japan and South Korea can structure the contingency agreement by following the normative decision theory, which focuses on obtaining the maximum utility by evaluating the options, objectives, uncertainties, and conflicts for each issue at hand. The primary issues are the apology, the contribution of money and what the money would specifically do, and the interests of the comfort women. Other relevant issues such as Japan providing apologies and reparations for comfort women from other countries, such as China, the Philippines, Singapore, and Malaysia, should be addressed as separate issues. Japan should address the apology directly to the comfort women, perhaps even face to face, and the comfort women should have the final say on whether or not the apology is sincere and will be accepted. As of 2018, the South Korean government stopped receiving funds from the Japanese government and is creating its own fund for the comfort women. Both parties should use this as an opportunity to restructure reparations and keep track of whether they are being enforced. In the case that both parties agree on revisiting the agreement, they should keep in mind that the comfort women are the ones who are at the core of this issue and that their wishes should be heard and respected. Although there is not as much information on negotiations between Japan and other countries regarding the comfort women issue, I hope that using an intervention similar to this one can set forth ideas that can finally bring justice for all the comfort women from South Korea, China, the Philippines, Singapore, and Malaysia.

15 Ibid.
16 Deepak Malhotra and Max H. Bazerman, Negotiation Genius: How to Overcome Obstacles and Achieve Brilliant Results at the Bargaining Table and Beyond (New York: Bantam Books, 2007), 113-133.
Funding Challenges for International Non-Governmental Organizations (NGOs)

ZOÉ HASKELL-CRAIG

International aid has increasingly flowed towards non-governmental organizations (NGOs) working to save lives and end poverty. These institutions have become a billion-dollar industry, expanding significantly in the last few decades and creating a complex dynamic as they fill gaps in the health care services provided by the recipient country’s government. By the end of the 1990s, the number of NGOs operating worldwide measured twenty-six thousand and by 1996 almost one-third of the United States’ African development assistance was granted to NGOs.1 While NGOs provide necessary health care services and public health interventions to millions of people across the globe, in recent years there have been concerns about the extent to which their projects produce the intended impact.2

In response, various groups have published protocols, most notably the 2005 Paris Declaration on Aid Effectiveness, but also many others.3 Their main concerns are the decisions made by public and private donors that eventually lead to project collapse. As a solution, they call for more predictable and multi-year aid commitments. Additionally, they recommend NGOs work closely with local partners, seek local ownership of the projects introduced, and strengthen existing health care systems. The latter recommendations aim at making projects more sustainable, able to maintain their impact even after the end of the project. This push for sustainability attempts to compensate for funding instability, and provides a hope that, in the future, foreign aid will no longer be necessary to support essential health care.

This push for better funding models and more sustainable projects is particularly important for projects that target on-going health issues such as safe drinking water. However, few recent studies have been done on the challenges that NGOs face with project sustainability, even


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while following the literature recommendations. This article outlines the ways in which NGOs are attempting to improve their impact and the shortfalls that still exist due to funding decisions, by studying recent projects in water, sanitation and hygiene (WASH) from CARE Kenya.

**Methodology**

While engaged in a study abroad semester in Kenya, I grew interested in the question of how NGOs are able to assess their impact on recurrent health issues. For my research, I looked at WASH because it is a fundamental and on-going concern for basic health. As well, I chose CARE Kenya because I believe it to be a representative example for the many large international NGOs operating throughout the world.

CARE Kenya has run projects involving water, sanitation and hygiene at least since the early 1990s. For my study, I focused on the two most recent projects: Jamaa Wazima and the Safe Water Systems (SWS). The Jamaa Wazima project (1999 – 2004) sought to install wells and water pumps in villages. The SWS, started in 2009, is an on-going partnership with Proctor & Gamble to deliver free water purification products to healthcare facilities and schools. I visited the offices of CARE Kenya in Siaya and Kisumu and reviewed the available documents for these projects: grant proposals, midterm evaluations, and activity reports. A lot of important documentation was unavailable, as I have noted in my findings.

**Findings**

By working with CARE Kenya to review the existing documents from WASH projects from 1999 to 2017, I identified several challenges that plague CARE Kenya and likely other international NGOs. First and foremost, public and private organizations that make funding decisions still do so in short cycles, against the recommendations of the Paris Declaration on Aid Effectiveness. Large, public organizations like the European Union (EU) and the Norwegian Agency for Development Cooperation (NORAD) allocate funds a few years at a time. For example, the Jamaa Wazima project was designed to run for four years, but had to apply annually for funding renewal. Funding from private sponsors is distributed on an even shorter basis; the P&G-funded SWS runs for only twenty months per site. This means that CARE Kenya cannot plan strategically for more than a few years at a time, even when funding is available for renewal.

In response to these challenges, CARE Kenya has followed literature guidelines and spends significant project time, energy, and funding on strengthening existing healthcare systems and promoting community ownership of the project. However, it is apparent from the Jamaa Wazima Project that the timeline for community sensitization and mobilization is on the order of a year or two – meaning a twenty month-long project cannot even attempt these activities and a four-year project barely has time to ensure that the newly created forms of community organization are functional.

A second challenge, closely linked to funding decisions, is that most CARE Kenya employees are hired on a contract basis for a specific project. Once the funding ends and the project closes, they are no longer part of the organization. Therefore, institutional knowledge is lost. While CARE Kenya plans for end-of-project transfer of documents to all the important shareholders (such as local administration), projects sometimes run over their allotted time and there is no record of which projects successfully implemented this transition. Compounding the problem is the fact that CARE Kenya lacks an online database of past project documents and there is no funding to hire someone to create one. Paper copies of documents are theoretically kept for
a maximum of seven years due to limited physical office space. Thus I was unable to find key information such as a list of villages in which the Jamaa Wazima project was run. In practice, many of the more recent documents were also missing.

Finally, there are few or no grants available for NGOs to do follow-up studies in the years after the completion of a project. There are concurrent research studies being carried out by university and CDC partners on the effectiveness of projects.\(^4\) However, these are not extensive enough to assess the long-term impact of CARE Kenya’s projects. This is consistent with a 2012 study, which found that between 1996 and 2008, for “the nineteen articles [published by NGOs] with available information, the data collection period ranged from three to thirty-six months.”\(^5\)

Despite CARE Kenya practicing most of the recommendations from the Paris Declaration and other NGO codes of conduct, no one knows the effectiveness of these strategies to improve the long-term impact of their projects. The funding model does not allow for sustained healthcare interventions, and so NGOs rely on the assumption that the community will continue their projects after they have withdrawn. However, if the community is unable to sustain this project, then the benefit is short-lived and CARE Kenya needs to return. Therefore, it is crucial to have information about the long-term sustainability of these projects.

**Recommendations and Conclusion**

This article examined several challenges for NGO project sustainability. The root problem is the decisions surrounding funding that do not allow for NGOs to address on-going health concerns. The short projects favored by grant decision-makers barely have the time to follow through with literature guidelines designed to make projects sustainable, such as strengthening existing health care systems and developing local ownership of the projects. Furthermore, grants do not exist to study the effectiveness of these guidelines in producing projects that continue to run after the NGO leaves. One possible solution is to attempt to regularly renew project grants, or apply for funding for projects that build off of previous ones. CARE Kenya has done both of these, but is again limited by their lack of overhead funding to maintain staff and develop filing systems to preserve the necessary documents.

Moving forward, I propose that grant-giving agencies such as the EU development fund, NORAD, and CARE International fund the research projects needed to understand whether the community is maintaining CARE Kenya’s projects after their completion. Furthermore, there needs to be a concerted effort to better store old project documentation and to maintain staff who can ensure that the end-of-project plans are being carried out. Finally, donor decision-makers must change funding models to reflect the fact that a short-term project cannot provide solutions for constant problems, such as a lack of clean drinking water. International donors should reject the idea that short-term funding can solve a recurrent problem. Instead they should either invest in community capacity building and the money required to research the efficacy of these structures or they should commit to long-term funding.


Active shooter safety precautions in schools have become top priorities for school board officials, parents, policy makers, and other members of the community. While constitutional debates concerning gun-rights remain unresolved, decision-makers work to develop systems to best protect students in a country where firearms are available to those with malicious intent. The most common practice is the implementation of active shooter safety drills to prepare students, administrators, and faculty for the event of a school shooting.

We live in a world of immediate solutions and simple binaries to evaluate difficult topics. Active shooter drills seem like the “correct” way to address the problem. Yet automatically evaluating a program as either a success or failure hinders in-depth analysis that determines best practices. Regarding the 2018 massacre at Marjory Stoneman Douglas High School, Broward County school board member Donna Korn states, “We’ve got the people prepared, we have prepared the campuses, but sometimes people still find a way to let these horrific things happen”.  

This article avoids the debate surrounding the sources of the shootings– individuals that are compelled to commit these crimes and the weapons themselves– by focusing on risk mitigation and the work involved with evaluating and refining these safety drills. By investigating the implementation of active shooter drills, this research can inform decision-makers of the effectiveness, costs, and benefits, followed by an investigation of all of the components in tandem using risk mitigation strategy to determine the best option.

Effectiveness

When evaluating the effectiveness of a school safety program, it is logical to begin with identifying what an effective program looks like. The US Department of Education lists key necessities including: a crisis team, consideration of context, involvement of community groups, plans for diverse needs of students and staff, training, and practice. The latter two points are essential to repeat to increase the level of effectiveness of the plans. “Chances of responding appropriately in a crisis will be much greater if all players have practiced the basic steps they will need to take. Training and drills are crucial.”  

The US Department of Education also offers a sample school advisory system, reproduced on the following page.  

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3 Ibid, 6-8.
makers begin to develop individual strategies for their school, the Department recommends that the key necessities be included in an effective fashion and a school advisory system similar to the sample be utilized to increase effectiveness.

Figure 1:

<table>
<thead>
<tr>
<th>Risk</th>
<th>Suggested Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEVERE (Red)</td>
<td>- Follow local and/or federal government instructions (listen to radio/TV)</td>
</tr>
<tr>
<td></td>
<td>- Activate crisis plan</td>
</tr>
<tr>
<td></td>
<td>- Restrict school access to essential personnel</td>
</tr>
<tr>
<td></td>
<td>- Cancel outside activities and field trips</td>
</tr>
<tr>
<td></td>
<td>- Provide mental health services to anxious students and staff</td>
</tr>
<tr>
<td>HIGH (Orange)</td>
<td>- Assign staff to monitor entrances at all times</td>
</tr>
<tr>
<td></td>
<td>- Assess facility security measures</td>
</tr>
<tr>
<td></td>
<td>- Update parents on preparedness efforts</td>
</tr>
<tr>
<td></td>
<td>- Update media on preparedness efforts</td>
</tr>
<tr>
<td></td>
<td>- Address student fears concerning possible terrorist attacks</td>
</tr>
<tr>
<td></td>
<td>- Place school and district crisis response teams on standby alert status</td>
</tr>
<tr>
<td>ELEVATED (Yellow)</td>
<td>- Inspect school buildings and grounds for suspicious activities</td>
</tr>
<tr>
<td></td>
<td>- Assess increased risk with public safety officials</td>
</tr>
<tr>
<td></td>
<td>- Review crisis response plans with school staff</td>
</tr>
<tr>
<td></td>
<td>- Test alternative communication capabilities</td>
</tr>
<tr>
<td>GUARDED (Blue)</td>
<td>- Review and upgrade security measures</td>
</tr>
<tr>
<td></td>
<td>- Review emergency communication plan</td>
</tr>
<tr>
<td></td>
<td>- Inventory, test, and repair communication equipment</td>
</tr>
<tr>
<td></td>
<td>- Inventory and restock emergency supplies</td>
</tr>
<tr>
<td></td>
<td>- Conduct crisis training and drills</td>
</tr>
<tr>
<td>LOW (Green)</td>
<td>- Assess and update crisis plans and procedures</td>
</tr>
<tr>
<td></td>
<td>- Discuss updates to school and local crisis plans with emergency responders</td>
</tr>
<tr>
<td></td>
<td>- Review duties and responsibilities of crisis team members</td>
</tr>
<tr>
<td></td>
<td>- Provide CPR and first aid training for staff</td>
</tr>
<tr>
<td></td>
<td>- Conduct 100% visitor ID check</td>
</tr>
</tbody>
</table>

However, plans need to be tested in order to measure effectiveness. Using case studies, we can better understand what a likely-effective and ineffective drill looks like. In the shooting that took place in November of 2017 at Rancho Tehama Elementary School in Northern California, school officials attributed the saving of likely many children’s lives to the use of a lockdown procedure. However, during the February 2018 mass shooting at Marjory Stoneman Douglas High School (MSD) in Parkland, Florida, the lockdown procedure was not helpful during the shooting. When the MSD community heard the fire alarm that the shooter had activated, the previously practiced lockdown training was rendered nearly useless. Following the Parkland shooting, school safety expert Michael Dorn offered the following list of suggestions to remedy incidents involving fire alarms:

A Decision Science Perspective of Active Shooter Safety Drills

- Have police officers respond to all school fire alarms.

- Have teachers conduct a “quick peek” before they exit the classroom with students when a fire alarm goes off and during drills. Teachers are taught to look and listen before they open the classroom door and to rapidly visually scan the hallway before they exit the classroom. Students prepare to evacuate while the teacher is doing this.

- Teach students not to get too spaced out when evacuating in order to keep line of sight and verbal communications open with the teacher.

- Do “reverse evacuation” drills so staff can turn students around more rapidly and smoothly.

- Make sure that school employees have whatever keys, cards, or fobs needed to enter the school rapidly in an emergency. Some schools shut down access with cards or fobs during a lockdown- the Parkland shooting is an example of why that approach could be dangerous.5

Dorn also emphasizes the importance of scenario-based training that allows staff to make safety decisions tailored to the specific event.6 However, this creates a moral issue. Allowing faculty to make decisions at the time of an incident may either increase their safety or put them in harm’s way. These individuals are also affected by the active shooter threat themselves. Dorn noted that those who receive this particular training “consistently perform worse than people with no training whatsoever.”7 Moreover, this freedom to make independent decisions destabilizes researchers’ abilities to evaluate the effectiveness of a safety program. It is impossible to know how each individual will approach an active shooter event until it does occur: giving them the option to do so creates nearly infinite avenues for potential failure or success. Yet this is frequently considered an “effective” program due to the unpredictable nature of active shooter situations.

Benefits

The benefits of active shooter safety training extend beyond the potential lives saved and injuries prevented from an effective program. Most individuals will likely never face an active shooter incident. However, those with training often report lowered levels of fear and anxiety due to previous unfamiliarity with procedures in the event of an assailant entry, in research conducted by Cynthia Cavallero Ryals.8 Increasing confidence in those facilitating procedures may make them more likely to act efficiently during a shooting.

Research published by the American Society for Healthcare Risk Management of the American Hospital Association employs prospective hazard analysis to explore active shooter emergency operations. Though describing a hospital scenario, its risk assessments of deviations from active shooter procedures are applicable to school scenarios. Their findings indicate

6 Ibid.
7 Ibid.
8 Cynthia Cavallero Ryals, School Leaders’ Perceptions of Conducting Active Shooter Drills, Master’s thesis, Southeastern Louisiana University, 2014, 149.
significant increased risk in some scenarios, such as delays in contacting authorities.\textsuperscript{9}

The risk incurred as a result of deviating from procedures is often due to hesitation in the event of an attack. In synthesizing the American Society for Healthcare Risk Management risk assessments, Alexandria Stewart’s analyses in “Active Shooter Simulations: An Agent-Based Model of Civilian Response Strategy,” and Ryals’s findings, we observe quantitative and qualitative evidence for the benefits from active shooter drill training. “Simulations can ensure proper training in order to reduce the number of casualties… Simulation provides a means to quickly and effectively examine many ‘what-if’ situations and adjust their response techniques and methods based on the outcomes of the situations.”\textsuperscript{10} From this evidence, we observe that simulation training allows individuals to practice the best ways to act in the event of an actual shooting attempt. If these individuals, particularly school staff, have comprehensive training and knowledge of procedures, they will be able to act more effectively and efficiently in order to facilitate maximum benefit from the programs implemented.

Costs
While there is much to be said of the benefits to these drills, we must also examine the costs. The following section explores the multitude of costs associated with implementing these drills. There is far less research detailing the benefits of active shooter training, other than risk reduction. I presume this is due to the ever-changing ideas of best practices. When programs are constantly changing due to outcries against costs and ineffectiveness, it is difficult for researchers to remain current with programs and assess their benefits.

Generally, resources are not a concern to communities when they are used to increase safety for students. However, all costs are not material. Research conducted by Cynthia Cavallero Ryals found that 87.9 percent of public schools conducted active shooter drills annually, at minimum. “School leaders were asked to indicate their feelings toward law enforcement participation in their schools’ active shooter drills. The majority of public and parochial school leaders welcomed law enforcement participation; however, a few school leaders indicated feelings of apprehension and anxiety toward their involvement.”\textsuperscript{11} Those in the minority express a very salient concern: there can be negative ramifications of designing drills that are “too real.” Ryals noted comments made by an elementary school leader who “expressed that law enforcement involvement is a cause of anxiety to the younger students,” and a junior high school leader that also expressed concerns of causing student anxiety with the use of law enforcement in drills.\textsuperscript{12}

A 2014 \textit{Wall Street Journal} article by Dan Frosch lists multiple cases of complaint, injury, and even lawsuits as a result of these realistic drills. Following the Sandy Hook Elementary School shooting in 2012, schools have reacted with drills such as those in Farmington School District in Farmington, Missouri, simulating actual shooters using airsoft guns and plastic pellets.\textsuperscript{13} There is significant pushback from these extremely realistic drills which often include law enforcement officials, as well. When incurring such high emotional costs, it seems logical to assume that these simulations


\textsuperscript{11} Cynthia Cavallero Ryals, \textit{School Leaders’ Perceptions of Conducting Active Shooter Drills}, 91.

\textsuperscript{12} Ibid, 87.

have significant benefit. However, Stewart’s exploration of simulation drills suggests otherwise. “Simulation models are also limited in depicting real world scenarios, especially in chaotic situations. It is difficult to model how people are going to react in active shooter situations because emotional states, individual knowledge of the situations, and cognitive decision-making cannot accurately be taken into account.” These considerations identify systematic contradictions: if they cause emotional trauma, yet cannot actually model the situation and therefore invoke a realistic reaction, are simulation drills actually worthwhile?

Additionally, these drills have assisted assailants, particularly in the case in Parkland, Florida in early 2018. “Marjory Stoneman Douglas High School had an active-shooter drill just last month. The shooter had been through such drills… countering [the drills] may have been a reason that, as he was beginning his rampage, the shooter pulled a fire alarm.” Even though schools can prepare for a fire alarm in an attempted school shooting, which was recommended for incorporation into safety programs in the Effectiveness section of this article, assailants can, and likely will, find more gaps that trainings do not fill.

Further, these drills plant ideas that may not have originally existed in the minds of students. If a struggling student has grown up knowing that school shootings occur and have been normalized by regular drills, they may consider attacking. Hamblin states “in any case, preparedness drills always change the baseline level of risk that people perceive. This heightening can manifest as stress and anxiety, not to mention changing the way kids understand how people treat one another—to even consider violence an option, not in some abstract way.” Though there is not research available directly analyzing this potential cause and effect, it is not difficult to see this as a conceivable causal relationship.

Costs of active shooter drills extend beyond the literal interpretation of cost as a monetary expense. Relevant and significant costs include emotional trauma for those participating, assistance to assailants, and presentation of the idea to conduct a shooting to participants. These costs are vital to consider when developing a safety program, however, in the interventions portion of this article, we will explore ways to mitigate these costs.

**Interventions**

Decisions regarding implementation of active shooter school safety drills can be reduced simply to the perceptions of competing risks of different options. How a school district administrator perceives the risk of an armed assailant or how a young student interprets a drill and the likelihood of their own safety being at risk while at school are two of the many ways decision-makers infer about risk. How this is communicated is essential when designing safety programs.

Articulated in “Communicating About the Risks of Terrorism (or Anything Else)”, it is advised to consider how well the risk communicator conveys the potential for an actual shooting to accompany these drills. We often think faculty training in this context as teaching procedural rules and actions to be taken in the event of a shooting. However, training faculty to be sound risk communicators who can mitigate negative psychological impacts of these drills is
often not even taken into account. I urge decision-makers to consider the following: as noted in Hamblin’s article, if “a faculty member plays the role of a shooter, jiggling doorknobs as children practice keeping perfectly silent,” should they not also be prepared to volunteer support and dialogue that decompresses students that are traumatized by this simulation?18

Another recommendation is for psychologists to be present to study the needs of the community the risk is being communicated to.19 Effective risk communication, in this context, understands that one statement of risk can be perceived in entirely different ways between each person that receives the message, and develops a strategy to communicate risk in a variety of ways such that each individual has the same, accurate understanding of the risk, in this case the possibility of an armed assailant with violent intent.

This recommendation assumes that decision-makers intend to implement an active shooter safety drill program. Combining these methods of communicating risk, developing an effective active shooter safety drill program using the aforementioned frameworks that emphasize the tailoring of programs to specific sites, the involvement of officials, as well as the other recommended components, and providing counseling to mitigate negative psychological impacts of the program is the suggested intervention from this research.

19 Baruch Fischhoff, “Communicating about the Risks of Terrorism (or Anything Else),” 528.
Interview with P.W. Singer

On January 29, 2019, P.W. Singer visited Carnegie Mellon University to speak about his new book, LikeWar: The Weaponization of Social Media. Singer is a Strategist at New America and an editor at Popular Science magazine. He discussed how social media is changing the world and how the world is changing social media, emphasizing the different ways in which social media platforms can be used as weapons of war. Prior to his current roles, Singer served at the Office of the Secretary of Defense, Harvard University, and as the founding director of the Center for 21st Century Security and Intelligence at Brookings, where he was the youngest person named senior fellow in its one-hundred-year history.

It creates the frame through which we look at the world. This dates back to even before AI, to the very concept of robots. Even before the word “robot” becomes applied to this space, [from] Greek mythology to Judaism in Eastern Europe, you have the idea of a Talos or a Golem, a machine servant - an inhuman servant that ultimately revolts against the humans...Then you get the idea in the 1920s of a “robata,” which is taken from the Czech word for “serf” or “slave”, that equally revolts. A play is made of how it’s [not only] a mechanical beast [but also] a mechanical servant that revolts. We’ve always had this kind of shaping effect.

I think that part of the challenge is sometimes [entertainment] steers us either to view things as real that maybe aren’t or on a timeline that’s not real. Or the inverse is to look at something that’s real and [say] “that’s just science fiction, right?” We can see that playing out in both spaces with larger trends of automation and AI. On one hand, you have an overall policymaker space that’s in denial of some of the massive changes that [automation is] going to bring to politics and society. But in turn, you’ve got this cohort of technology business leaders that, unfortunately, are framing so much of the societal issues in a science fiction-like framing. We’re about to go through a new industrial age and yet so much of the talk is [about a] classic robot takeover.

You have another issue in this [which] is that ... too often [people] don’t actually read [science fiction] closely. They pull the wrong lesson from what the author intended. A great
illustration of this would be [Isaac Asmiov’s] Three Laws of Robotics...What people keep forgetting is [that] in every one of Asimov’s stories, the robots figured out a way around the laws. The laws were not something to be mimicked. Yet you see people saying, “Let’s make the Three Laws of Robotics real”, and you’re like, “Did you not read the stories?” So, you can see this influence moving in lots of different directions. As someone who has written both fiction and non-fiction, I think science fiction can be powerful and it can be [a method of] incredibly useful informative guiding. But it can also be, like everything else, used and abused.

Singer: In many ways [we] took some of the issues that Clint was wrestling with, but looked beyond - not just the realm of terrorism or Russian info-ops to how it’s affecting news, politics, conflict, life writ large. And you’ve hit it exactly, there’s a couple of issues that are playing out that we’ve explored in the book.

One is how the platforms themselves are designed not for veracity, but virality. They don’t reward the truth, they reward what engages, what trends. When I say reward, that’s everything from the structure of who’s followed the most to what’s pushed into your news feed. What’s important in all of this is [that] what happens online doesn’t just stay online. That is something that any teenager knows and [that] anyone who has any awareness of politics now knows, but [what’s important is] also how it affects other media platforms, that those consumers are not aware of. Over ninety-six percent of journalists use social media to do everything from find out what news to cover, to what angle to take on the news, to who to interview for it, whether it’s a newspaper reporter, a booker for a talk radio show, a TV news producer. What’s playing out online is thus shaping what the TV viewer [sees] - the person in the taxicab who isn’t on Instagram -, they’re still shaped by [Instagram]. [This is] part of what you were [talking about, that] what’s going viral online creates our perceptions of the world beyond, our sense of what the truth of it is.

Second, any teenager all the way up to the president has figured out that you have online “truths” that reshape what people think is real or not and those online “truths” are shaped by, again, everything from what is trending to what is being shared. The power of social media is you get to control what you post, you get to share it with the world. That means [that], in some of the core lessons of the book, the truth may be out there. It’s very hard to keep secrets in this world of mass observation.

Zhang: [Continuing with] your interview with CBSN, you said, “It's not really just a battle over your point of view anymore, but a battle of reality.” Clint Watts visited CMU last semester to talk about his book, Messing with the Enemy: Surviving in a Social Media World of Hackers, Terrorists, Russians and Fake News. He mentioned the rising issue of physical vs. artificial realities with the latter affecting [people from] younger generations like me. Before, everything was in the physical form of reality. People communicated with each other in a physical sense. But now, you find that people don’t really interact that way anymore. How do you think the science and technology behind these social media platforms play into the decision-making of actors trying to take advantage and participate in this “like war”?
[and] mass sharing. But that cross of self-selection and virality also means that what is shared is not always the full truth. [For example], you take lots of different selfies to find the exact best one that shows you in the best light [when you're at a party]. [But] what happened at the party? Here is a part of the image [of what happened] but you may not know the context of it.

A good illustration is what happened [in January with] a group of teenagers when they went on the National Mall and ran into another set of protestors. There was an actual reality [of what happened], something [had] actually happened. We have videos of it from multiple, different perspectives to capture the truth of what happened. However, each of our little online tribes pulled our own “truth” from it and then, what we explore in LikeWar, fought over it. LikeWar is the idea that social media started off as a place for fun, then became a space for communication, then became a space for business, and then it became a place of battle. And it remains all of that. It’s simultaneously an entertainment space, a communication space, a marketplace but it’s also a conflict space where we battle back and forth about everything from who to vote for in a school election all the way up to a national election to terrorism. It’s the idea that the internet has become “like war” - the space where you can hack what’s going on in these networks by driving ideas viral.

Zhang: What are some ways you think the US government can help reduce the risks of this “like war” from escalating and becoming more severe than it already is? Do you believe the current administration has done anything about it and if it has, was it effective or not?

Singer: There’s a great parallel between cybersecurity and cyberwar and what’s playing out in this idea we call “like war.” If you think of cybersecurity and cyberwar, [they’re] about the hacking of networks and “like war” is about the hacking of people on the networks. In each of them, there’s no one silver bullet solution and there’s no one group’s responsibility to fix it. There’s definitely a role for government and if you think in cybersecurity, it’s government writ large. [The role of government in cybersecurity has] been everything from creating new military organizations [like] US Cyber Command, to changing how we teach students in elementary school, who are now starting to learn cybersecurity best practices.

Unfortunately, the United States may have invented the internet but we are now the nation that every other democracy points to and says, “Don’t let what happened to them happen to us.” There’s a positive side of that dark reality, in that it means there’s other models out there for the US to follow. For example, [Estonia and the Nordic states] have all sorts of policy shifts... to better secure their nation from these new forms of online threats - everything from notifications of incoming disinformation attacks, almost like weather alerts, to digital literacy training in their schools... As the Estonian Ambassador once put it, they just talk about it. They acknowledge that it’s there, they acknowledge the risks, and they talk about the risks all the time to build up public awareness.

Unfortunately, the US body politic is conflicted... on this problem. Essentially, you have roughly sixty percent of the body politic that acknowledges that it’s real, and you’ve got forty percent that is in active denial of it. I use that term, “active denial,” because it actually has an echoing of Soviet disinformation operations. A great illustration of this is [that] the State Department has an office that was created to help deal with these new kinds of online threats. That office was actually funded with over one hundred million dollars worth of budget from Congress and yet the Trump administration didn’t spend that money. That office, in fact, didn’t even hire a single person who spoke Russian in it. A different example would be election security. After all
the things that played out in 2016, the Trump administration did not hold a single public cabinet meeting about election security for two years, until right before the 2018 election. That single meeting only talked about the risk of hacking voting machines and not the social media influence operations side of the problem. So we focused on the part that has, fortunately, never been successfully done on scale rather than the part that we can document actually did happen.

The problem is also that you have a president who is in active denial of this problem and, even worse, has facilitated some of the worst aspects of it, for example, pushing out examples of extremism, disinformation, and rewarding some of the worst online actors with attention (such as when the president] retweeted the account of one of the PizzaGate conspiracy theorists multiple times since [it happened]. As long as we have that problem, we’re not going to be able to get past [this] and that is a cold hard reality. It challenges what all the different parts of the US government that deal with national security want to do in this space and yet are held back. For instance, the military has created a national security strategy that touches on the online threat from Russia and yet it finds it very difficult to implement [it] as long as [the military] has a Commander-in-Chief that’s taking the opposite approach.

Zhang: Speaking of President Donald Trump, in a short docuseries done by the New York Times about Russian disinformation called “Operation Infektion,” they mentioned the role that celebrities and other people with a large following on social media play in furthering the spread of disinformation. They [said] these people [played] the role of the “useful idiot.” How large of a role do you think these “useful idiots” play in furthering this political polarization in our country through this social media behavior?

Singer: What we found from looking at the examples that range from Donald Trump individually to the Trump campaign to Taylor Swift to Junaid Hussain, ISIS’s top recruiter, to Wendy’s, the burger company, to Chicago gangs to teenagers to reality stars, was that, while they might seem wildly diverse, they actually operated in much the same way. There was a new set of rules of how you conducted “like war,” of how you drove your message viral to achieve your goals online and it would then allow you to achieve your goals in the real world. [People’s] real-world goals might be wildly different. “I want people to vote for me.” “I want people to buy my album.” “I want people to join my terrorist group.” “I want people to buy my burgers.” “I want people to think that I’m popular in my 7th grade class.” The reality though is that achieving these goals all comes back to [this new] set of rules. That also meant that those that understood the rules were advantaged in their battles against those that did not, whether it was the direct opposition, the rival politician, the rival nation, the rival celebrity. The other part of the battle is the role played by you and I, the people who help decide who wins by our clicks, by our shares. If we didn’t understand the space we were operating in, we were... ignorant, being taken advantage of.

Sometimes these battles would mix and cross. You would see figures in one space jump into another, leveraging someone else’s battles and someone else’s attention. ISIS, for example, would monitor what was trending and try and hop into that. Everything from the World Cup to an interview with a Youtube celebrity, [ISIS] would leverage that. [The same logic applies to when] Donald Trump as part of his rise into politics leaped into the anti-vaxxer movement - the false conspiracy theory that vaccines harm kids. Then, in turn, they’re leveraging it for their own goals. So, [people are] jumping into that [topic], they’re giving more heat and attention to that topic but they’re doing it because they can give heat and attention back to their own space. It is apt to use here the phrase “useful idiot”,

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We see more sophisticated technology... moving into this space. Bots, as an example, the automated accounts of the current generation, are pretty simplistic; they are pretty easy to figure out when they're fake or not. However, we now know that they are still incredibly significant and powerful in online battles, steering overall trends. For instance, one-third of the online conversation that was around Brexit was driven by these inauthentic voices. Them chirping away helps create everything from false internet trends that then drive reporting of a certain angle or the like.

Yet, the current bots, are fairly simple compared to what's coming, and what's coming moves in two different directions. One is what are called MADCOMS, which are basically bots that can more effectively mimic and simulate a real human. Then you have deep fakes, which is essentially applying the concept to imagery, video, and the like. So the future might be both the fake account that's speaking to you and/or the bit of information the video that's going viral, both of which will be hyper-realistic, to almost impossible for a human to figure out what is real or not.

Like everything else, these new tech will be used for good and bad. We're already seeing how they're being used for entertainment. They're also being used for harassment and with the parallel to it of “fellow traveler”. Essentially, these are all terms from the Soviet Cold War days. A “fellow traveler” was someone who shared the ideology, who kind of knew what you were doing, so they weren’t a direct paid agent of you. But they were pushing your cause somewhat consciously. A “useful idiot” was someone who you didn't have to pay but they would do the work [of spreading the ideology] for you. The interesting question now is first, in these various campaigns, was a “useful idiot” and who was a “fellow traveler”? Who was actually directly knowingly colluding? But then second is how long will the “useful idiot” defense work in a world as we become more and more aware of this [concept]? So, part of what I argue is, now that we have the data to know who was pushing what. It's one thing to have done it, it's another to stay in active denial that you did it. It's a third to not say, “Ok, here's what happened, here's how I got it wrong, here's what I'm putting into place to make sure it doesn't happen again.” Too few of people, from politicians down to social media users like you and I, are willing to go through that process of admission. We now know who pushed Russian disinformation [and] who pushed conspiracy theory. We also know who consumed it. And yet we have not [come to grips with the problem].

Zhang: Going back to the docuseries I was talking about, “Operation Infektion”, it also brought up the problem of bots, which you also mention in your book. How does the presence of these “deep fakes” influence the public's views and what is happening in reality? I think we touched a little bit on this, but how do these “deep fakes” eventually influence the public's views on what is really happening and how does this impact on the community contributing to these “social media wars”?

Singer: This points to a key area that CMU is, frankly, at the center of. The online battles of today are akin to the use of the biplanes in WWI; they're just a taste of what's to come.
Each of them [had] a slightly different agenda, but the end result of [their actions] is that more people saw the false image and it became their “truth” versus the reality.

Zhang: Do you think this problem could really be resolved? Is it just a problem [that] we have to play catch-up with instead of actually preventing it?

Singer: Social media is a technology, and every technology going back to literally the very first stone that was picked up, has been used for both good and bad. So I don't think that we should frame it as 'can we solve it all.' As long as there is politics, as long as people are using the internet, these will combine together. That said, there's another pattern that we have to be aware of: that early sense of techno-optimism, but also a little bit of denialism...

You can see that going back to the creation of dynamite or the telegraph. We tell the story in the book of the origin of the telegraph, how [the inventors] are congratulating each other that they've created a mechanism of peace. It will bind the world together in positivity, they celebrate. Literally the very first message that crosses the Atlantic says this, that the telegraph will be a new medium of peace. Then within a week, it's being used to send military movement orders. So often, why the bad wins out more often than the good is because of this combination of techno-optimism [and] failure to anticipate obvious harms and head them off before they happen. You won't solve them all, but you can certainly limit them or create accountability.

I want to tell you a story that is relevant to CMU that illustrates this challenge within a university setting. I was here almost ten years ago to give a speech about a book I had done called “Wired for War” that looked at the growing use of robotics in both the private sector and war. The science fiction of robots was becoming real, and it was starting to be used on the battlefield, creating a whole new abuse and being explored for weaponization. The positive example I like to use is the movie, Solo, [which] came out [last year], exploring a young Han Solo. It was not that great a movie. But someone had taken that and layered onto it so that the not-so-great actor in it was replaced by images of a young Harrison Ford. And, thus, the movie now is way better. The harassment version of this would be the use of this technology for layering real faces on top of pornography, so it makes it seem like someone was in a pornographic movie or scene that they were not.

There will also be the weaponization side of this tech in politics. The test version is what we've seen already in the creation of speeches that politicians have not actually given. Universities have done this as a test. Another example is not a full “deep fake,” but it shows where things are headed. Someone manipulated the imagery of the students that have become gun control activists after Parkland. They did a photoshoot that showed them tearing up a bullseye from a shooting range and that [image] was manipulated to make it look like they were tearing up the US Constitution. What was important about this is that it's the combination [of this false image], with the other activities such that [this] false image was driven viral by gun rights activists, alt-right trolls, and Russian false accounts.
series of very real legal, political, moral issues that everyone, from generals to politicians to students to journalists, was going to have to start to wrestle with. I gave a speech at CMU and afterwards, a professor came up to me and angrily chided me for ‘troubling his students by asking them to think about the ethics of their work.’ Essentially, he was describing it as a distraction - that they should only focus on creating the tech, and that anything outside the lab was not something to be thought of and thus a distraction. That kind of thinking is, to me, the antithesis of how we should operate. In no way, shape, or form was I saying, “Don’t work on robotics!” I think there are so many different cool things out of it. But everyone, whether you are a policymaker [or] a student, should always be thinking about the implications of their work...

It was just a strange experience and I think that it’s notable that that was the kind of discourse that was acceptable about ten years back, but less so the case. Indeed, now you have so many different programs at CMU that are wrestling with this very thing he warned against, the larger aspect of the work and cross between technology and policy and politics and law and ethics.

Zhang: Last question - how did you get involved in public service through the world of academia, consulting, and think tank work?

Singer: I’ve always been interested in these topics of current events. I can remember in elementary school, I was the weird kid who would read news magazines rather than the Boxcar Kids. So I’ve always been interested in this space. My original link actually came out of undergraduate research. I had a senior thesis project that looked at the role of a new kind of business. The new industry was made up of former soldiers that sold military services for hire. They basically corporatized the mercenary trade. I did a thesis on it that then became my graduate school dissertation and then it became my first book Corporate Warriors, which was the first to look at the rise of the private military industry. Then I got a fellowship at a think tank in Washington. I started working on a variety of different topics there. So my entry point was actually a topic that I chose as a student, I had no idea that it would shape me that way.

There is a lesson I think in this. Early on, I was advised by a very distinguished professor... that the topic that would become my dissertation, and then book, was not worthy. So lesson number one- the naysayers are not always right, even if they are distinguished. This doesn't mean don't listen to them and that they’re always wrong. But the point is, if you feel passionately about something and you have the data to back it up, don't be dissuaded. The second is when you’re thinking about the topics that you might work on, whether if it’s for an undergraduate course essay all the way up to a book, pick something that you believe to be interesting and important. It will not only keep you engaged during that project but it also might take you into whole new places that you never thought of.