Illini Journal of International Security

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Letter from the Editor

Dear reader,

On behalf of the IJOIS Editorial Board, the Program in Arms Control & Domestic and International Security, the University Library, and the supportive academic community of the University of Illinois at Urbana-Champaign, we would like to thank you for reading the fourth issue of Illini Journal of International Security (IJOIS)! IJOIS is a peer-reviewed academic journal that was founded in September 2015 by undergraduate students at the University of Illinois at Urbana-Champaign. We publish exceptional papers on topics within international security or foreign affairs.

Our fourth contains a culmination of seven papers that have been formed over the last year into exceptional papers covering a wide range of security and foreign policy topics. Beginning with issues that pertain primarily to the Middle East, Zachary Cleary summarizes the evolution of the academic literature and findings on targeted killings in his paper "Re-evaluating the Efficacy of Targeted Killing." Human Rights issues in the Syrian Civil War are highlighted in Dylan Hyams' paper: "The Global Crisis in Syria".

Several of the papers in this edition focus on international agreements and norms including Caitlin McLain's paper, "Compliance and Consequence", covers the CTBTO and whether or not it can continue to be successful moving forward. Similarily, Zishen Ye discusses why an Arms Embargo on China is failing. With regards to international law and norms, Lina Dayem writes a very interesting and relevant paper on when cyber attacks can constitute an act of war in her paper: "The Ethics of Cyber Warfare".

Other great papers included in this edition are Justin Tomczyk's comparison of the capabilities and strategies of the CSTO's and NATO's rapid response forces in his paper: "OPFOR, BLUFOR: A Comparative Analysis of NATO and the CSTO". And finally, Zach Wherli provides an original analysis on the link between agricultural development and state fragility in his paper: "Planting the Seeds for Stability: The Power of Development Diplomacy and the Impact of U.S. Agricultural Development Policy on Fragile States."

These exceptional undergraduate papers present novel arguments on a wide array of issues within international security and foreign affairs. We hope that these papers will challenge and inform our readers, spark discussion, and encourage undergraduate students to explore these pressing issues or pursue international studies further.

We hope you enjoy reading!
Chase Bloch

About the Illini Journal of International Security

The Illini Journal of International Security (IJOIS) is a peer-reviewed undergraduate academic journal that was founded in September 2015 by undergraduate students at the University of Illinois at Urbana-Champaign. IJOIS is published biannually through the University of Illinois Library with the support of the Program of Arms Control & Domestic and International Security (ACDIS) and is comprised of exceptional undergraduate and graduate papers on topics related to international security or foreign affairs. IJOIS utilizes a cross-disciplinary approach and accepts papers from students studying the social sciences, STEM fields, business and the humanities that analyze international security issues from innovative perspectives. While IJOIS is run by students at UIUC, the Journal accepts submissions from students at all University of Illinois campuses (Urbana-Champaign, Chicago, and Springfield).

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Introduction

As modern society advances technologically, information networks have become vulnerable to wrongdoing by malicious states and non-state actors. With recent strikes affecting critical infrastructures around the globe, the threats associated with cyber attacks no longer seem like science fiction. While the world has not yet faced catastrophic cyber assaults, our dependency on information networks exposes us to potentially devastating attacks. These technologies present attractive targets for cyber attackers aiming to undermine national interests or even to threaten state sovereignty. The international community is at a critical juncture: we now have the opportunity to determine what is morally permissible with regard to cyber warfare before we are ever faced with a worst-case scenario.

This essay draws upon Just War Theory to examine the military responses that are morally permissible in the face of a cyber attack. Indeed, certain cyber attacks originating from a state's government can be considered acts of war when analogous to conventional attacks either in means or in effect. These cases may justify a self-defensive response from victim states. Cyber responses are preferable to conventional responses in these cases, depending on the victim's technological capabilities.

However, the realities of cyber engagement have particular qualities, which, in contrast to other forms of conflict, render these more straightforward ethical norms less applicable. Firstly, the most dangerous cyber attacks are not physically immediate in the way of traditional weapons. Thus, ethical norms based primarily on the permissibility or impermissibility of physical violence are less straightforwardly applicable to cyber attacks without considering the grave, physically harmful potential of targeting immaterial code. Secondly, and more importantly, cyber attacks are often difficult to credibly attribute. The epistemological problem associated with an unattributed cyber attack leaves its victim at a seeming impasse: if the state cannot credibly identify its aggressor, how can it justify a counter-strike?

This paper takes a different, less traditional approach toward the difficulty of attribution, as well as toward the justified responses to identified non-state actors. I argue that according to the present legal and military norms, the epistemological bar for justified military retaliation is set at a level that may be appropriate for conventional attacks, but inappropriately high for cyber attacks. While very precise attribution to the source computer(s) may not be possible in many cases, the state from which the attack originated can more readily be identified. I contend that if a cyber attack can be reliably traced to the territory of a particular state, this state should be held at least partially responsible for the attack. Calling for the establishment and enforcement of codified norms of domestic and international cyber criminality, I argue that if a state becomes a frequent launchpad for cyber attacks, does not reasonably cooperate with victims to identify perpetrators, and fails to enforce criminal laws prosecuting such attacks, the state may ultimately be liable for these attacks. If diplomatic means prove ineffective, victim states would be justified in a reprisal. This punitive form of retaliation would only be permissible in a narrow range of cases and should only be limited to temporarily disabling the launchpad state's cyber testing capabilities.

Are Cyber Attacks Acts of War?

If cyber attacks can be categorized as acts of war, then a conventional attack may be a justifiable response. Certainly, the idea of using physical force against attacks on computer systems may seem counterintuitive. However, I argue that these intuitions stem from the fact that many cyber attacks thus far have not exhibited the physical characteristics of conventional attacks, making straightforward classifications a challenge. However, the term "cyber attack" denotes a vast array of potential operations, many of which may be analogous to recognized acts of war.

According to international legal norms, the first use of force is prohibited. This is apparent in Article 2.4 of the United Nations Charter, which prohibits "the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations." The term "aggression" denotes the first use of force, which would justify a victim state's self-defensive war. The term is defined in Resolution 3314 of the United Nations General Assembly: "Aggression is the use of armed force by a State against the sovereignty, territorial integrity or political independence of another State." According to this document, aggression includes, but is not limited to (see Article 4): invasions, bombardments, blockades, and armed attacks by one state against another (see Article 3).

While purposefully non-exhaustive, the language of the document conveys the notion that war is physical, transgressing real boundaries and causing tangible effects. These two documents were drafted in the mid-20th century, so it is unsurprising that they qualify military coercion in a manner consistent with contemporary warfare: by its instruments of "arms" and "force" (Schmitt, 2010, p. 154). By contrast, the physical coerciveness of a cyber attack stems from its consequences, not from its instruments. At the same time, Resolution 3314 does not exhaustively define "armed attack," leaving an interpretive space where cyber attacks could fit. For instance, considering computers and digital code as weapons leads to a broad definition of aggressive cyber attacks. On the other hand, when assuming a more strict interpretation of "force," then the documents do not prohibit non-physical economic or political coercion (Tallinn Manual, p. 46)— consequences of many of the cyber attacks we have witnessed to date. Ultimately, aggression broadly includes threats to and breaches of the peace (UN General Assembly Resolution 3314, Preamble), and the explicit purpose of the United Nations is to "maintain peace and security" (Charter of the United Nations, Article 1.1). Thus, it is reasonable to believe that at least some physically coercive cyber attacks could map onto its definition of aggression, even by a relatively conservative interpretation.

However, without an established convention for classifying cyber attacks as a form of aggression, philosophers as well as military ethicists have proposed three main standards for analyzing whether a cyber attack can be classified as an act of war. The first is a "means-based" metric. This standard classifies a cyber attack as an act of war if the attack produces the same type of physically-immediate destruction that an existing conventional weapon can, thus mirroring existing military means. The second standard is "target-based." By this metric, a cyber attack constitutes an act of war if it damages national critical infrastructure.

The final standard is "effects-based," which classifies a cyber attack as aggression if it produces a physically violent or overall destructive consequence to its victim. Therefore, the type of harm itself may not be completely analogous to that created by conventional weapons. This metric regards injurious effects as those that either create physical harm (like the means-based metric) or engender unacceptable physical or digital interferences to critical infrastructure (like the target-based metric). As with the target-based metric, what exactly constitutes "unacceptable interferences" is ambiguous and open to interpretation.

Note that the last two metrics could, by certain interpretations, consider some harm that is not physically threatening (such as interfering with financial services) to be aggression. However, just because a type of cyber attack is considered aggression does not give a state a *carte blanche* to start a war. Indeed, a war started in response to such an attack would not meet the *jus ad bellum* proportionality requirement (i.e. the threshold at which the harm done to a victim justifies war as a proportional response), since the potential loss of life and damage to property would be unacceptable to defend one's state against an economic downturn. The necessity requirement (i.e. the state's need to resolve a conflict through war) may not be met either. Indeed, a war would not be an effective or immediate way to reverse an economic downturn, and would be much more likely to exacerbate it.

Regardless of which of these metrics is adopted, the crucial point is that scholars and international policymakers (most notably NATO and the US Department of Defense) do recognize that cyber attacks can and should be considered as acts of war. By extension, the use of force in self-defense may be a permissible response by victims.

What is a Just Response to a Cyber Attack?

A just response to a cyber attack will vary based upon the type of attack, as well as the entity that perpetrated it. The conduct with regard to a state or a non-state actor will entail different procedures. Attacks may be attributed to states or non-state actors, or they may go unattributed. Cases attributed to states are the most straightforward. Most actions that constitute aggression would justifiably prompt a victim state to undertake a war of self-defense, provided that the *jus ad bellum* standards of proportionality and necessity are met. Responses against state-committed cyber attacks that do not constitute aggression may include "naming and shaming" or economic sanctions.

Cyber "aggression" attributed to a non-state actor cannot be considered an act of war because, according to international law, only states can declare war upon each other. Therefore, attacks of this character should be considered cyber criminality, and would require international cooperation between the victim and the "launchpad" state to pursue the attacker. Certainly, if an attack cannot be attributed at all, the victim state cannot react. However, as I will argue later in this essay, non-attributed attacks that can be reliably traced to a particular territory may justify certain types of force in response.

In what immediately follows, I will discuss permissible conduct with regard to attributed attacks. For the sake of argument, I will define aggression using the "effects-based" metric because it has been adopted publicly by the US and NATO, and consequently has real-world policy relevance. However, I acknowledge that if this metric of aggression is interchanged with any of the other standards, the permissible conduct in each case may change as well.

Illustration 1: State-Attributed Cyber Attack with a Violent Effect

In this case, state X has launched a cyber attack on state Y, targeting an automated weapon on a base in the territory of state Y, causing it to activate and fire at a false target within

the territory. On the surface, this case appears analogous to a UAV being flown over the border of state Y, or artillery shell being fired over the border into the territory of state Y (Strawser, 2010, p. 354). However, a key difference is that no enemy person nor weapon violated the territorial integrity of state X. Indeed, the hijacked weaponry itself originates in the attacked state—it originates in state Y rather than in state X—even though the computer initiating the attack may be in a remote location.

This nuance, while noteworthy from a tactical standpoint, does not create confusion when it comes to the internationally conventional "aggression." Consider the UN General Assembly's definition of aggression. It states that aggression entails the "use of armed force to deprive peoples of their right to self-determination, freedom and independence, or to disrupt territorial integrity" (UN General Assembly Resolution 3314). Specifically, we are told that "Bombardment by the armed forces of a State against the territory of another State or the use of any weapons by a State against the territory of another State" qualifies as aggression (UN General Assembly Resolution 3314, Article 3b). Paying close attention to the article's language, we note that the locus of the attack's origin is not specified. Therefore, there is no categorical difference if the attack is initiated in state Y or elsewhere; rather, the *effect* of that attack must be within the territory of state Y. Furthermore, the article uses broad language when referring to weapon types: it takes any weapon into account. Thus, the definition of aggression does not preclude a cyber attack, since in this case, it activated a conventional weapon, and a computer has been mobilized to a violent end.

Now that state X's attack qualifies as aggression, let us assess how state Y may proceed. According to the UN's definition, "A war of aggression is a crime against international peace. Aggression gives rise to international responsibility" (UN General Assembly Resolution 3314, Article 5.2). Taken together with the Charter of the United Nations, and assuming that a peaceable resolution cannot be forged, then it would be legally justified for state Y to respond to state X's attack through military means, since state X has begun an illegal war against state Y, and Y has the right to defend itself against this attack. Indeed, the document specifies that "nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations" (The Charter of the United Nations, "Chapter VII: Action with Respect to Threats to the Peace, Breaches of the Peace, and Acts of Aggression," Article 51). In short, a military response may legally be launched against a cyber attack with a violent effect.

Illustration 2: State-Attributed cyber attack with a plausible hostile threat
In this case, imagine that state X has launched a cyber attack on state Y, targeting state Y's government servers. The attack causes a shutdown of the system of military control and command of state Y, temporarily interfering with military communication. Since we are classifying aggression with an "effects-based" metric, it is evident that this attack constitutes aggression: an attack of this magnitude on a security system would constitute a serious attack on a state's critical infrastructure, thereby justifying a self-defensive response.

Some observers may object to the idea that a conventional attack would be justified to this form of aggression. However, I reject this position. Unlike case 1, this cyber attack produces no immediate physical harm. We may consider this attack a cyber form of the military tactic of interdiction. In conventional circumstances, interdiction is defined as "an action to divert, disrupt, delay, or destroy the enemy's military surface capability before it can be used effectively against friendly forces or to achieve enemy objectives" (Scott, 2016, p. vii). Applying this definition to the present case, state X executes cyber interdiction on state Y. Notably, the phrasing of the above definition does not pertain only to a first use of force. Indeed, it may imply that the state upon which the interdiction was carried out was already in a state of war or had prior hostile intent. Therefore, to avoid the causality dilemma of attributing state X's behavior to preemption, I assume for the sake of argument that state Y gave state X no reason to believe that it was planning an imminent attack, nor threatening violence.

It is plausible for the government of state Y to believe that state X has hostile, even bellicose, intent. According to the UN definition, "threats" on peace may be considered aggression. One such threat detailed in the document is a blockade of ports or coasts (UN General Assembly Resolution 3314, Article 3c). A blockade is similar in character to a cyber interdiction insofar as it does not have an immediate violent effect, but disrupts a state's capabilities. In fact, blockades are often categorized as interdiction (Scott, 2016). The categorical similarity between cyber interdiction and blockades may be enough to argue that state X's act is aggression, and allowing state Y to legally proceed as in case 1. Once again, a military response may be permissible against a cyber attack.

However, some may argue that cyber interdiction is not analogous to a blockade because of the very evident imminence that a conventional blockade implies. Without this direct link to the UN Charter, the question still stands: would it be plausible for state Y to believe that state X poses a hostile threat? To answer, I will invoke Walzer's logic of preemption. Walzer uses the purposefully vague term "sufficient threat" as the defining trigger of preemption (Walzer, 1977, p. 81). While Walzer does not give a comprehensive list of the types of attacks that would constitute sufficient threats, he does offer a set of reasoning allowing us to judge different situations. On his rule, "states may use military force in the face of threats of war, whenever the failure to do so would seriously risk their territorial integrity or political independence. Under such circumstances it can firmly be said that they have been forced to fight and that they are the victims of aggression" (Walzer, 1977, p.84). A response to a sufficient threat would be considered an act of self-defense.

The disabling of military control and communication would seem to pose a sufficient threat in Walzer's sense. This is because State Y could logically assume that state X's intention was to inhibit their ability to effectively mobilize against an unknown threat. Based upon Y's prior knowledge and relationship with X, this situation may breed a high level of fear in Y, leading them to anticipate any number of frightening scenarios. In this case, if Y has reason to believe, based upon contextually relevant factors, that X has dangerous hostile intent, then X poses a sufficient threat. Thus, a preemptive strike is permissible (that is, if state Y is able to

mobilize some sort of counter-strike, despite the attack). Since this attack is defined as self-defense against unjust aggression, then a military response is justified, by the logic of self-defense employed in case 1. What aim would a preemptive strike serve against X when the exact threat it poses is unknown? A physical or cyber attack targeting X's military-related critical infrastructure or X's command and control could undermine X's conventional and/or cyber capabilities. This strike could exacerbate escalations if mishandled. Therefore, it should only be undertaken if it is reasonable to believe that the attack could succeed. If successful, the strike may allow Y to take control of escalations, and thwart X's unknown, future attack.

Illustration 3: State-Attributed cyber attack without violent effect or hostile threat

In this case, imagine that state X has launched a cyber attack on state Y, targeting voting machines and altering election results. For the sake of argument, assume that neither the elected candidate nor opposing candidates planned to start a war, or commit atrocities such as genocide or enslavement. Considering the act in isolation, there is not enough information to determine state X's motivations in tampering with the results. Since no candidate claimed hostile intentions, we cannot say that state X was trying to thwart an election result that threatened one or multiple nations. Nor can we say state X wanted to ensure that a potentially violent candidate came to power. It is undeniable, however, that state X violates state Y's right to self-determination by tampering with the election results. A violation of self-determination alone may be a dubious reason to go to war.

Moreover, the language of "effects-based" aggression is no longer applicable here, for there is no physical harm to persons or property or critical infrastructure. While it is surely morally objectionable to interfere with a voting system, the system does not qualify as critical infrastructure. Even if voting systems qualified, an attack in response to election tampering would not meet the necessity or proportionality criteria. For, Y could simply annul the results of the election without engaging militarily with X. The potential loss of life or property damage resulting from a strike against X cannot be justified. Therefore, a military retaliation, whether conventional or cyber, would not be permissible. A better course of action would be for state Y to reclaim the self-determination it temporarily lost through a revote (preferably in a manner that is not susceptible to cyber interference). State Y may also be justified in employing a non-military type of punishment against X, such as economic sanctions.

Illustration 4: Attacks Attributed to a Non-State Actor

The nascent international precedent with respect to cyber criminality, as evidenced in the most relevant international treaty, the Budapest Convention on Cyber Crime, is that states should be expected to cooperate with each other in the maintenance of global cyber security (Council of Europe, "Convention on Cyber Crime," 2001). International justice of this sort requires an obligation of states to pursue non-state actors who commit cyber attacks from the state's territory. (Graham, 2017) Beyond this, "it confirms the duty of states to prevent their territories from being used by non-state actors to conduct these attacks against other states" (Graham, 2017,

p. 94). Such obligations would include fortifying their cyber defenses, criminalizing cyber attacks within their own domestic law, finding and monitoring belligerent hacking groups before attacks occur, cooperating with the victim state to locate perpetrators, or even extraditing a cyber criminal to the relevant victim state. These obligations are reasonable, because they help to maintain an ordered cyber terrain and ultimately minimize the use of physical force.

On my view, the reasonable level of cooperation should be determined on a case-by-case basis, since states may have different levels of wealth and technological capabilities, which may be due to structural factors beyond their control. It may be that weak states are willing to cooperate. They genuinely may place a strong effort into their cooperation, but still lack sufficient capabilities to prevent attacks or pursue assailants. It would be unfair to punish such states for negligence, especially if they are willing to have the victim state aid them in pursuit of assailant. In the same vein, I contend that states willing to cooperate, but unable to uphold these obligations due to lack of resources or technological capability, should be given aid to fortify their cyber systems against attack or increase monitoring capabilities. This way, upholding the terms of the obligations will not be based primarily on wealth and technological advancements. The overall effect of such aid will be increased global cyber security.

However, if a state is unwilling to perform these obligations, victim states may reasonably believe that the attack was state-sponsored or endorsed. Moreover, it is possible that the state knew about a threat posed by a non-state actor, but did not act within its capabilities to thwart the threat, making the state culpably negligent. In these cases, victims may then be justified in imposing some sort of punishment or sanction against the state. Depending on the lethality of the attack or frequency with which attacks originate from that state, victims may be justified in holding this safe-haven state responsible for the acts committed by non-state actors. The permissible resources in this case mirrors that of non-attributed attacks: a one-time reprisal with the intention of punishing that state. I will argue for this type of response in detail later in the essay.

Self-defense: Conventional Responses or Cyber Responses?

When it is appropriate to respond to cyber aggression, a state may employ a cyber or conventional form of retaliation. In this section, I assess these two means for their relevant moral differences. Bare in mind that any morally justified response, whether cyber or conventional, would be subject to the constraints of proportionality and necessity.

Cyber attacks have the potential to minimize harm in several ways. Firstly, engaging in a cyber response minimizes risk to a state's soldiers because they do not have to physically be present in hostile territory, where they may become subject to enemy attack or capture. Secondly, cyber attacks have the potential to precisely target a specific area of code within a certain system without causing unnecessary damage to persons or property. Therefore, in theory, cyber attacks could effectively disrupt enemy systems while eliminating collateral damage. Conversely, even precise conventional means, such as UAV strikes, create excess collateral damage. In a similar vein, the degree of engagement can be controlled more easily with a cyber

attack than with a conventional attack. For instance, the visceral shock and immediacy of bombing a military base may engender a more rapid and more violent escalation than temporarily shutting down military communication lines. Finally, many cyber attacks are meant to be temporary (due to a time-sensitive code), or can be reversed with repairs or patches. On the other hand, the effects of most conventional attacks cannot be reversed. And while buildings can be rebuilt and populations can regrow, the actual damage caused by conventional attacks is permanent.

Despite the fact that a cyber attack may be enacted by anyone, a highly complex cyber attack takes an advanced level of technological sophistication to perform. At the same time, for an attack to be successful, it will often involve both cyber and conventional forms of reconnaissance and espionage (Wheeler and Larsen, 2003). Due to these factors, the entities that can successfully carry out a highly sophisticated attack may be limited to wealthy governments with strong technological and intelligence capabilities. Therefore, if we determine that only cyber retaliation is permissible against cyber attacks, we may inadvertently create an asymmetrical moral environment. Strong governments could enact cyber attacks against weaker governments without fear that they will succumb to a symmetrical response.

Therefore, I suggest that cyber attacks should be preferred to conventional attacks because they can minimize the harm associated with retaliatory attacks. Indeed, if a cyber attack could be effective enough to achieve a certain outcome, the necessity requirement may bar a state from utilizing a conventional attack in its stead. However, it may be permissible to enact a conventional attack in response if the victim state does not have the technological capabilities to respond with a reasonably effective cyber attack.

The Problem of Attribution

Some cyber attacks are claimed by their perpetrators at the outset, and other unclaimed attacks can be attributed by their victims, although the attribution may not be immediate. However, given the relatively low threshold for being able to commit a cyber attack, and the ease with which an attack's origins can be purposefully obscured, attribution becomes difficult. While some argue that the problem of attribution is not unique to cyber attacks (Cook, 2010), cyber attacks are particularly susceptible to attribution problems in a way that conventional attacks are not.

While Internet Protocol (IP) addresses can be traced—i.e. the specific code assigned to each device on a network—doing so does not always provide credible leads. For example, an IP address can easily be faked using proxy servers. Certain attacks use malware to infect "civilian" computers, turning them into robots to enact remote commands. Thus, tracing an attack to its computer of origin does not provide information about the computer that triggered the attack. One attack of this category, the Denial of Service attack, triggers multiple, even thousands, of computers in diverse locations to launch attacks simultaneously, making pinpointing the originating computer even more difficult.

Notably, in countries, such as North Korea, where the computer systems are centralized or heavily regulated, then it is reasonable to assume that a cyber attack was launched by, or directly commissioned by, the government (Cook, 2010). On the other hand, an IP traced to a state with a prominent group of non-state actors could serve as a smokescreen for government-launched attacks (Cook, 2010).

In recent years, cyber security experts have developed more sophisticated methods to get closer to attributing attacks, such as linguistic analysis (Boebert, 2011), tracing the pattern of the malware infection (Sklerov, 2009), or analyzing the attack's targets and its level of sophistication. While these methods are often inconclusive, they may be helpful in allowing us to pursue the most just response to a non-attributed attack. This is why certain experts consider attribution as a sliding scale of confidence, rather than pursuing a standard of 100% certainty (Jones, 2017; Wheeler and Larsen, 2003).

At the present moment, completely and decisively resolving an attribution problem requires dispensing time and money in conventional forms of investigation or espionage (Dipert, 2010). But we can imagine situations where a state faced with violence must react quickly to a cyber attack, even with the epistemological barrier imposed by the problem of attribution.

Can a state respond to an unattributed attack?

The attribution problem complicates cases 1 and 2 for two reasons. Firstly, aggression is defined in Just War doctrine as a crime of states upon states (UN General Assembly Resolution 3314). Both justifications above hinged upon the concept of self-defense against aggression. These justifications do not apply in the case of a non-state actor. Therefore, it would be insufficient to argue Just War Theory's doctrine of self-defense to aggression alone to justify an attack against a non-attributed strike. Secondly, if a state is to launch a counter-attack against a non-attributed cyber attack targeting the territory where it originated, it has to accept the possibility that in some scenarios, it may be attacking a non-liable community. In other words, if a non-state actor is the true perpetrator, then the attacking state breaks the other's peace, effectively committing aggression.

Yet, determining that the victim state cannot act against a violent attack or a hostile threat, from a consequentialist stance, may unintentionally generate a precarious precedent for coercive engagement. For if a state has no recourse in the face of the problem of attribution, it leaves itself open to many future attacks. The only time that it can counter is against assailants who are too careless or too ill equipped to cover their tracks (Eberle, 2013). Thus, we could inadvertently create a precedent where states and non-state actors alike would be motivated to develop systems that disguise their identities, knowing that the epistemological doubt they have created will leave their victims with limited permissible recourse. And the better malicious entities become at hiding their identities, the more dangerous and lethal operations they could commit without fear of detection or retaliation.

Against this backdrop, I reason that a victims state may be justified in holding a launchpad state responsible for an attack that is emitted from its territory. The purpose for this is

threefold. First, states will have less motivation to perpetrate acts themselves, since they cannot hide behind the smokescreen of non-attribution. Second, states will have incentive to control these entities by monitoring and policing within their borders if they know that they may be attacked for the actions of non-state actors. Additionally, they will become less inclined to harbor or fund these groups. Finally, this principle encourages states to become increasingly concerned for the maintenance of not only their own national cyber security, but also global cyber security: a posture that is appropriate to the fact cyber systems are at their very essence a mark of globalization. Therefore, from a consequentialist standpoint, holding states liable for attacks emanating from their territories would theoretically serve as an incentive against becoming a launchpad or safe-haven state, and at the same time, serving as a disincentive to becoming a cyber attacker, and promoting an overall safer cyber terrain.

If states are held responsible for the attacks, are they liable to violent retaliation? As discussed earlier in this essay, states have a duty to prevent cyber attacks from emanating from their territory, either committed by the state itself or by a non-state actor. A cyber attack traced to the state's territory indicates a failure in one of those two duties. The *ex post facto* investigation should determine if the state could have been reasonably expected to prevent such an attack from occurring. If the state could have prevented the attack, it becomes liable for the harm caused by that attack. Again, this is because, from a consequentialist perspective, punishing a state for failing in this duty would incentivize them to prevent cyber attacks.

To assess a launchpad state's liability for an attack, victims must look to the launchpad's domestic policy toward cyber attacks (Graham, 2017). The victim state should consider the launchpad state's criminal law, its cyber security fortifications and monitoring platforms, its record of cooperation with victim states in the past, and its record of arrest and prosecution of known cyber criminals (Graham, 2017). Strict criminal laws and rigorous law enforcement would be deterrents for cyber attacks (Sklerov, 2009). A lack of criminal laws or law enforcement may indicate a state's passivity and indifference toward preventing cyber attacks. The international community should give due vigilance to the potential of ill-intentioned states scapegoating innocent individuals in order to give the false impression that they comply with the law enforcement requirement. These factors, taken together, will help the victim to determine whether an attack could have been prevented from occurring. The level of reasonable cooperation expected from each state would differ based on its resources and technological capabilities. This should be taken into account so as not to create a precedent that would unfairly punish well-intentioned states lacking in adequate resources due to structural factors beyond their control. If an attack originates from such a state, it may be morally responsible, although not liable to punishment.

One may question why states should be held liable for attacks that they potentially did not commit. The debate about holding states responsible for the actions of non-state actors is not a new one. Indeed, it is often debated with regard to states in which terrorists hide. Some critics argue that holding a state responsible for the actions of non-state actors unjustly shifts the blame to an innocent state. Critics argue that the victim states are actually initiating hostilities by

unjustly invading an innocent state, thereby transgressing its sovereignty and territorial integrity. To this objection, I respond that states that allow attacks to launch from their territories are acting as a safe-haven for terrorists, thereby acting immorally. By failing to stem attacks, they increase the potential of harm to innocent people. Moreover, if a state cannot effectively police its borders, it demonstrates that it is not entirely sovereign. Retaliatory violence against such states would be punitive in character—punishing the launchpad states for not upholding their sovereign duty. Therefore, these states would be liable to a reprisal, as it is a punitive use of violence.

Reprisals

The doctrine of reprisals is a military convention that, with some key modifications, would allow victims to hold launchpad states responsible for any cyber attacks originating in its territory. By definition, a reprisal is "a limited and deliberate violation of international law to punish another sovereign state that has already broken [these laws]" (Partsch, 2000, p. 380-383). The doctrine of reprisals came under harsh scrutiny after WWII, and justifiably so, because it entails the purposeful targeting innocent individuals. Until this point, the doctrine of reprisals' rather straightforward, "eye for an eye" mentality was thought to intuitively appeal to fairness (Christopher, 2004).

Reprisals are considered to be punitive for two reasons. First, reprisals are used to punish the state for an unjust attack that it has committed. More importantly, reprisals are used to punish a state for failing in its sovereign duty to prevent its territory from becoming a safe-haven for belligerent non-state actors. This punishment is intended to be a one-time action to reestablish an already broken peace (Christopher, 2004; Walzer, 1977). Thus, a reprisal is meant to prevent an escalation to war, rather than initiate a new one. The reprisal is committed against the state for not being able to uphold, or refusing to uphold, this sovereign obligations of policing within its territory. These attacks are coercive ones, used to incite the state to autonomously police its territory (Walzer, 1977).

Reprisals are illegal under international law for two main reasons. Firstly, reprisals, being forms of punishment, constitute a form of retributive justice executed directly by states rather than by an international tribunal, etc. Secondly, reprisals generally involve the massacre of civilians or prisoners of war, both of which are illegal and immoral. However, with a key modification, I argue that a reprisal may be a morally justified response to a cyber attack in certain cases. A state's reprisal can be morally justified if it minimizes, and preferably eliminates, harm to morally innocent people. Walzer assumes this line of reasoning, stating that reprisals should target property. Reprisers should make certain that any bystanders leave the scene well in advance of the attack. Walzer justifies this stipulation by noting that attacks on property challenge state sovereignty, without committing an "affront to humanity" by harming individuals who have not forfeited their right to life in any way (p. 219). Thus, even if individuals were killed in the initial attack, doing so in the reprisal would constitute murder (p. 217).

In the case of cyber warfare, if we are committed to the notion that reprisers must avoid all harm to civilians, then reprisals symmetrical to the original attack would be unjust in many cases. Certainly, targeting the critical infrastructure of a state would generally be impermissible because it creates the massive potential for civilian harm. For instance, a reprisal against a cyber attack of a hospital's power cannot target another hospital because it would place civilians in unnecessary harm. Likewise, launching an artillery missile at civilians in order to reprise a similar attack would also be unjust. Thus, it becomes clear that to remain morally justified, the reprisal to a cyber attack should be chosen very carefully. However, the reprisal could target property, such as less consequential types of computer systems. Alternatively, the victim could disable the cyber attack testing capabilities of the other state. The property destroyed in the reprisal should be proportionate to what was destroyed by the initial cyber attack (Walzer, 1977). It is reasonable to assume that, as long as the harm is proportionate, the reprisal may be cyber or conventional. At the same time, there are important factors to consider when deciding between a cyber attack or a conventional attack, as explained in a prior section. We can transpose the same reasoning to reprisals: a cyber reprisal should be preferred to a conventional reprisal unless the victim state lacks effective cyber capabilities.

Thresholds to justify reprisals

It would be unjustified to undertake the use of force without attempting diplomatic means in advance. Commensurate to this idea would be the installation of a threshold by which to determine if states uphold their duties to prevent cyber attacks that originate from within their territories. I propose two such thresholds: one regarding the number of attacks originating from the state and the other regarding the degree of severity of these attacks.

The first threshold, the number of unattributed attacks that originate from a certain state, should be adopted because it demonstrates how rigorously a state upholds its duty to prevent itself from becoming a safe-haven for cyber attackers, or from being a repeat cyber attacker itself. If several attacks originate from the same territory, this could point to a few explanations, none of which are positive for the state in question. The first is that the state is unable to police within its own borders, indicating that it is not completely sovereign over its territory. The second is that the state is unwilling to install the necessary measures to prevent non-state actors from committing cyber attacks, meaning that it is harboring these attackers. Finally, it could mean that the state's government is committing the attacks itself, but has advanced enough capabilities to hide its identity, a prospect that is both dangerous and disingenuous. As stated earlier, well-intentioned, cooperative states that are weak for economic or structural reasons beyond their control would not be liable to attack. They may accept aid to fortify their cyber defenses or increase law enforcement capabilities. The actual threshold should be determined by the international community. When the threshold is reached, a victim may be justified in the use of force against the other state.

The second threshold, the severity of the attack, is an important one because it emphasizes the proportionality justification. An attack may not be severe enough to justify the

use of force against it. Furthermore, if an attack is extremely severe or threatens the critical infrastructure in a tremendous way, then a victim state may be justified in retaliating as a direct response to this single attack, but only after allowing the originator state a certain amount of time to attempt to rectify the situation, search for the assailant, etc. However, it is true that some very extreme attacks, for example, false activation of a nuclear weapon, require a far more urgent response than others. It is reasonable to assume that attacks taking a more extreme nature would be far more likely to mirror the bellicose motivations and advanced capabilities of a government than a non-state actor. The idea of being able to punish a state for a single unattributed attack is rather tenuous, and lends itself very easily to abuse. I stipulate that doing so should remain illegal, so as not to create a dangerous, easily-abusable norms, although in extreme cases such conduct may be morally justified in retaliating after a single attack.

Conclusion

The international community is at a crucial moment: we now have the opportunity to determine what is morally permissible with regard to cyber warfare before we are ever faced with a worst-case scenario. Arguably, this is the best moment to decide the moral principles, which will govern our future conduct by influencing policy determinations. In this essay, I have explored the just responses to a cyber attack arriving at one self-defensive account and one punitive account. Attributed attacks constitute a first use of force, and justify self-defensive responses by victims. I first assessed just responses to attributed attacks. These self-defensive responses varied based upon the attack's character, as well as the assailant. I then posited that cyber responses were preferable to conventional responses in these cases, depending on the victim's capabilities. Finally, I tackled addressed.

The problem of attribution requires a very different category of response, however. Victim states may sometimes hold launchpad states responsible for unattributed attacks originating in their territory. When states were liable to attack, then the punitive measure of reprisal was a justified response. Notably, I draw upon and adapt a traditional norm to address a very contemporary problem in this growing field of coercive engagement.

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OPFOR, BLUFOR: A Comparative Analysis of NATO and the CSTO

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Introduction

Following the collapse of the Soviet Union and turbulence of the 1990s, the Russian Federation has reemerged as a regional power in the greater Eurasian region. Through its participation in the Shanghai Cooperation Organization and the creation of the Eurasian Economic Union, Moscow has emulated the West's usage of treaty organizations and regional bodies as a means of power-projection. Among the many regional bodies encompassing the former Soviet Union, few are as relevant to Russian defense policy and Eurasian security as the CSTO (Collective Security Treaty Organization). Like the Warsaw Pact before it, the CSTO functions as the security pillar of Moscow's political reconstruction of Greater Eurasia. This paper will analyze the general function of the CSTO, compare the equipment and doctrine used by NATO and the CSTO, and contrast the CSTO's Rapid Reaction Force (CRRF) to NATO's Response Force (NRF), the Spearheads.

The Structure of the CSTO

The CSTO is currently composed of six member states (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Tajikistan, and the Russian Federation) and two observers (Afghanistan and Serbia). The organization was formed in 1992 and, similar to the Commonwealth of Independent States (CIS), is composed entirely of former Soviet republics. Georgia, Azerbaijan, and Uzbekistan have all formally left the alliance while Turkmenistan has completely abstained from membership. Although Ukraine never pursued membership in the CSTO, Russia did maintain a naval facility at Sevastopol prior to the annexation of Crimea. All six members of the alliance compose the CIS Joint Air Defense System—a separate regional network of radar systems, anti-air installations, and airports designed to secure airspace throughout the former Soviet Union. Beyond its absolute advantage in population, geographic size, and military might, Russia effectively maintains veto power over the establishment of new military bases in other CSTO members by third parties (Sodiqov, 2012).

Member Obligations within the CSTO

One of the easiest ways to understand the function of the CSTO is to compare it to its western counterpart, NATO. When analyzing the founding treaties of the CSTO and NATO, there is a visible disparity in what sort of actions each alliance expects of their members. NATO places a large emphasis on obligatory action and unquestionable commitment towards the defense of the alliance. In comparison, the CSTO stresses the voluntary nature of collective defense and the supremacy of national sovereignty over collective action. An effective way to understand this divide is to compare key articles within the founding charters of both alliances.

Article 5 (NATO)
The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defence recognised by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.
Any such armed attack and all measures taken as a result thereof shall immediately be reported to the Security Council. Such measures shall be terminated when the Security Council has taken the measures necessary to restore and maintain international peace and security.
(NATO, 1949)

NATO's Article 5 clearly states how members of the alliance must respond to an attack against one member, the legal action considered invoked (in this case, Article 51 of the United Nations charter), and the actions that may be taken to secure peace,"...including the use of armed force." This article even includes reference to the Security Council and what actions would result

in the resolution of Article 5,"...such measures shall be terminated when the Security Council has taken the measures necessary to restore and maintain international peace and security."

Compared to NATO's founding treaty, the CSTO lists significantly fewer obligations of its members in regards to collective defense and crisis response. This is most evident in articles three and five of the document, the closest thing to an "action clause" in the treaty:

Article 3:
The goals of the Organization shall be strengthening of peace, international and regional security and stability, protection of independence on a collective basis, territorial integrity and sovereignty of the Member States, in achievement of which the Member States prefer political means.

Article 5:
The Organization shall operate on the basis of strict respect of independence, voluntariness of participation, equal rights and duties of the Member States, non-interference into the affairs falling within the national jurisdiction of the Member States.
(CSTO, 1992)

Article 3 of the CSTO treaty states the alliance's preference towards political resolution, while Article 5 reinforces the strictly voluntary nature of the alliance and the relationship between its members. Compared to the details listed in NATO's Article 5, the CSTO leaves the conditions required for collective action and the means of conflict resolution open to interpretation. Even the Warsaw Pact, the Soviet-led predecessor to the CSTO, expected a higher degree of action in response to a security threat:

Article 4:
In the event of armed attack in Europe on one or more of the Parties to the Treaty by any state or group of states, each of the Parties to the Treaty, in the exercise of its right to individual or collective self-defence in accordance with Article 51 of the Charter of the United Nations Organization, shall immediately, either individually or in agreement with other Parties to the Treaty, come to the assistance of the state or states attacked with all such means as it deems necessary, including armed force. The Parties to the Treaty shall immediately consult concerning the necessary measures to be taken by them jointly in order to restore and maintain international peace and security. Measures taken on the basis of this Article shall be reported to the Security Council in conformity with the provisions of the Charter of the United Nations Organization. These measures shall be discontinued immediately the Security Council adopts the necessary measures to restore and maintain international peace and security (Warsaw Pact, 1955).

The inclusion of the phrase "...either individually or in agreement with other Parties to the Treaty, come to the assistance of the state or states attacked with all such means as it deems necessary, including armed force," implies a significantly larger degree of member autonomy in the Warsaw Pact compared to the CSTO. The CSTO's hesitancy to include stronger terminology may be a reflection of the Warsaw Pact's history, as the only joint action taken by the organization was the 1968 invasion of Czechoslovakia, another member of the alliance (Global Security, 2011). The disparity between NATO and CSTO member expectations may be an indication of the greater difference in defense doctrine and what "collective action" would be taken by either treaty organization.

A Comparison of Equipment and Projection Capabilities

Infantry and Armor:

The standard infantry weapon among CSTO members is the AK-74, a rifle developed in the early 1970s which saw heavy usage throughout the Eastern Bloc and elsewhere in the world as a major export armament. Infantry are typically supported by BMP-2 infantry fighting vehicles and BTR-80 armored personnel carriers, two vehicles whose designs date back to the mid 1980s. The T-72 tank remains the cornerstone of the CSTO's armored formations and has seen prolonged service life due to a wide variety of retrofits and updates. Recently, the Russian Federation unveiled the T-14 Armata, a next-generation main battle tank designed as part of a wider modernization effort in the Russian military. While members of the CSTO are allowed to purchase weapons from the Russian Federation at the same price as the Russian military (Weitz, 2014), the militaries of the CSTO remain dependent on Soviet-era weaponry.

NATO utilizes a heterogeneous collection of weapons and military hardware. It is not uncommon for NATO members to employ a combination of domestically produced arms and equipment imported from other members of the alliance. This diverse mix of weaponry is bound together by decades of standardization practices designed to ensure cross-compatibility. For example, France, the United Kingdom, and the United States use different assault rifles in their respective militaries, but through NATO standardization, each rifle fires the same caliber round and utilizes the same type of magazine (Arvidsson, 2008). A lesser degree of standardification is seen among former Warsaw Pact members in NATO. While countries like Poland and Bulgaria still depend on Soviet-designed weaponry, a variety of modernization programs has ensured a degree of cross-compatibility with NATO-standard hardware (CITE).

The continued usage of Soviet weaponry and universal dependence on Russian arms imports within the CSTO has effectively created a monoculture of military equipment. This provides the CSTO a slight advantage, as members of the alliance may enjoy near-perfect hardware compatibility between one another. This greatly reduces the logistical burden of field operations, as CSTO members would not be concerned with compatibility between competing standards of military equipment.

Naval Capabilities

The Russian Navy represents the CSTO's main means of naval projection. The Russian Navy maintains a presence in the Baltic Sea, Black Sea, Pacific Ocean, and the Arctic Ocean. Russia's naval capabilities in the far north are greatly enhanced by the usage of nuclear powered icebreakers—craft capable of exerting more force than their diesel-powered counterparts and breaking through thicker ice (Zerkalov, 2016). The Russian Navy also contains the aircraft cruiser *Admiral Kuznetsov*. The *Admiral Kuznetsov*'s designation as an "aircraft cruiser" is a reflection of its heavy armament and formal classification as a "heavy aircraft-carrying missile cruiser" by the Russian Navy ("тяжелый авианесущий крейсер" - ТАВКР). The *Admiral Kuznetsov*'s multirole capability comes at the cost of a reduced aircraft capacity compared to other aircraft carriers. In 2016 the *Admiral Kuznetsov* was deployed in the Mediterranean Sea as part of a naval operation in support of the Syrian government (RIA Novosti, 2016). Kazakhstan currently maintains a 14-vessel patrol fleet in the Caspian Sea. While this fleet is mostly preoccupied with enforcing Kazakhstan's claims to the Caspian Sea, the fleet's isolation from international waters has greatly diminished its strategic utility.

The Russian and Kazakh navies are dwarfed by the combined naval forces of NATO. The United States possesses 11 aircraft carriers, with six currently deployed. When combined with the three fixed-wing aircraft carriers utilized by other NATO members (the *Charles de Gaulle*, *Cavour*, and newly commissioned *Queen Elizabeth*), the number of aircraft carriers operated by NATO forces grows to nine. This number does not include amphibious assault ships, helicopter carriers, and other ships capable of launching vertical take-off and landing (VTOL) aircraft. There is also a visible difference in the amount of aircraft, crew, and other auxiliary forces fielded by both navies. The Russian Navy is staffed by 148,000 personnel and is supported by 359 aircraft (Defense Intelligence Agency, 2017). In comparison, the US Navy alone is crewed by 322,421 personnel (not including reserves) and maintains a complement of at least 3,700 aircraft (U.S. Navy, 2017).

Aircraft and Air Defense

Compared to the extensive network of air bases and aircraft carriers spanning from the Pacific coast of Canada and the United States to Eastern Europe, the air forces of the CSTO are limited to operations within the former Soviet Union. While the Russian air force has demonstrated a continued presence in strategic theaters like the Baltic Sea and Scandinavia, other members of the CSTO struggle to match Russia's aerial projection capabilities. The air forces of smaller CSTO members such as Tajikistan typically operate a limited fleet of aging Soviet-designed craft or, in Armenia's case, function primarily as support infrastructure for Russian air divisions stationed in their territory (Mkrtchyan, 2016). The disparity of aerial capabilities within the CSTO, combined with the size of the alliance's airspace (an area covering roughly 13 percent of the Earth's landmass), has lead to a greater emphasis on air-defense in place of aerial superiority.

The S-300 and S-400 surface-to-air missile systems arguably provides the largest strategic utility among members of the alliance. The S-300 was developed in 1975 and served as the primary means of sophisticated air-defense for the Eastern Bloc as a whole. Depending on the particular variant and method of launch, the S-300 missile is capable of intercepting targets within a range of 40-250 kilometers (Aerospace Daily, 2015). While primarily attached to infantry regiments or deployed in fixed positions, the S-300 has been adapted for compatibility with certain naval craft (the most notable being the *Admiral Kuznetsov*). Armenia, Belarus, Kazakhstan, and the Russian all utilize the S-300.

The S-400 was developed in the early 1990s and represents a modernized version of the S-300 system. Unlike its predecessor, the S-400 is capable of intercepting cruise missiles and other forms of ballistic artillery (Gady, 2017). Certain configurations of the S-400 may reach a range of roughly 400 km (Dr. Kopp, 2014). It is likely that the development of such capabilities was influenced by NATO's proposed "Missile Shield" over Eastern Europe. The deployment of S-300 and S-400 anti-air systems throughout the CSTO would be an effective counterweight against NATO's aerial superiority and would force an opponent to engage the alliance through ground-based conventional methods.

The Collective Rapid Reaction Force

The CSTO's Collective Rapid Reaction Force (CRRF) is a multinational military brigade created in 2009, designed to provide an immediate response to a threat against a CSTO member. The two largest contributors to the CRRF are the Russian Federation and Kazakhstan—both of which contribute paratrooper units in the CRRF (Denisenko, 2009). Belarus, Kyrgyzstan, Armenia, and Tajikistan have also contributed their own infantry elements to the formation. While no longer a member of the CSTO, Uzbekistan pledged to commit resources to CSTO missions and the CRRF on an "ad-hoc basis" during Tashkent's second membership period (Tolipov, 2013).

As stated by the alliance's leadership, the primary targets of the CRRF are non-state actors such as terror cells or trafficking networks (CSTO, 1991). Given the focus on these two groups, it is likely that the CRRF's theaters of operation would be Central Asia and the Caucuses. Both regions face their own challenges related to terrorism while Central Asia's notoriously porous borders have made the region a gateway for narcotics and weapons trafficking into the former Soviet Union. Although not officially a CRRF mission, military exercises between Russia and other members of the CSTO (e.g. Zapad 2017) offer a hint of the organization's capabilities in interstate conflict. Following Russian military doctrine after the annexation of Crimea, Zapad (2017) placed heavy emphasis on the usage of "hybrid war" elements and focused on mobility and asymmetric elements of conflict rather than rehabilitating older unwieldy Soviet strategies (Schmitt, 2017).

There are many scenarios that would lead to an external deployment of the CSTO Rapid Reaction Force. One possible situation would be deployment to a frozen conflict zone such as South Ossetia, Abkhazia, Nagorno-Karabakh or the Luhansk People's Republic/Donetsk

People's Republic as part of a peacekeeping operation. None of these territories are recognized as independent states by the international community. However, these frozen conflict zones receive extensive material, political, and military support from members of the CSTO. An example of this relationship would be Russia's engagement with South Ossetia and Abkhazia. Moscow remains one of the largest advocates for the international recognition of Abkhazian and South Ossetian independence from Georgia. Beyond political support, Moscow maintains a military presence in both territories and has ensures varying degrees of economic integration between both territories and the Russian Federation (Gerrits, 2016). It is possible that the CRRF may be mobilized and deployed to one of these frozen conflict territories in response to a geopolitical crisis, particularly if escalation of the crisis would pose a direct threat to a member of the CSTO. It is likely that this sort of action would emulate Russia's role in the 2008 Russo-Georgian war, for Russia's actions were largely focused on supporting already existing South Ossetian and Abkhazian militias in opposition to the Georgian military (Nichol, 2009).

Another hypothetical scenario that would lead to the external deployment of the CRRF would be the establishment of a peacekeeping mission to Syria as part of a larger regional stabilization effort. While rumors of impending CSTO deployment to Syria were quickly dispelled by the governments of Kazakhstan and Kyrgyzstan (Kucera, 2017), operations conducted by Russia (such as the de-mining of Palmyra and deployment of the *Admiral Kuznetsov* in the Mediterranean Sea in support of the Assad regime) provide an insight into what sort of action would be taken by the CSTO in relation to the Syrian Civil War.

The CSTO Rapid Reaction Force and NATO's Spearhead

The NATO Response Force (NRF) is a multipurpose military formation created in 2002. The purpose of the NRF is to provide an immediate response to any crisis facing the alliance, including non-military threats such as natural disasters or political instability. NRF deployments include disaster-relief following Hurricane Katrina and security operations during the Athens Olympic games and 2004 Afghan presidential elections (European Parliament, 2014). In 2014, NATO members approved the creation of the Very High Readiness Joint Task Force (VJTF), often referred to as the "Spearhead Force." While the Spearhead Force shares a similar multi-purpose role as the NRF, the VJTF features a greater amount of troops designated for rapid-response actions and a larger emphasis on combat operations. The Spearhead Force is primarily designed for crisis management and rapid response and may also act as a vanguard for a larger NATO-led intervention mission. The Spearhead Force is composed of 5,000 troops and is designed for deployment within "three to five days" of a crisis (NATO, 2015). This Spearhead Force is supported by NATO's Standing Naval Maritime Groups and may be accompanied by other aerial and naval assets. The formation almost exclusively uses temporary deployment in place of permanent stationing and is primarily focused on the eastern members of the alliance such as Poland, Romania, and the Baltic States. The creation of the Spearhead Force was partially in response to political developments in Eastern Europe in early 2014, as Russia's

intervention in Crimea and eastern Ukraine following Euromaidan has lead to a renewed interest among NATO members in addressing the challenges posed by state-actors.

Although the Collective Rapid Reaction and Spearhead forces share a similar emphasis on rapid response and crisis management, there are many elements that separate both formations. NATO's Spearhead is focused on a system of continuous rotating deployment, while the Rapid Reaction force is based on static deployment to fixed military installations throughout the CSTO. While the Spearhead utilizes elements of naval support to enhance mobility and projection capabilities, the Rapid Reaction Force is heavily dependent on airborne infantry and paratrooper elements due to the land-locked nature of much of the CSTO.

There is also a disparity between the size and structure of both forces. Compared to the Spreadhead force's function as a small, highly mobile contingent, the CSTO's designation of multiple brigades and divisions as part of the Collective Rapid Reaction Force seems to imply a greater emphasis on macroscopic regional security rather than precision crisis response. This may be a result of the CSTO's significantly larger geographic area. Just as the Collective Rapid Reaction and Spearhead forces differ in their geographic deployment, the CRRF is composed of a static group of designated divisions while the Spearhead is composed of a rotating brigades that have been designated to the mission.

Although the Collective Rapid Reaction Force has never been formally deployed, a component of the CRRF participated in the annexation of Crimea and subsequent war in eastern Ukraine. The 31st Guards Air Assault Brigade, one of the two Russian units designated as part of the Collective Rapid Reaction Force in 2009 - was dispatched to the Crimean peninsula without insignia as part of the irregular forces often referred to as "Little Green Men" (Sutyagin, 2015). Following the occupation of Crimea, the 31st Guards Air Assault Brigade participated in the Battle of Ilovaisk, a major engagement between Russian-backed separatists and the Ukrainian military in August 2014. The involvement of a major CCRF component in the annexation and subsequent invasion of another state contrasts sharply with the Spearhead's emphasis on ally assistance and crisis response. Considering the importance of the 31st Guards Air Assault Brigade to the functionality of the CRRF, it is entirely possible that the Collective Rapid Reaction Force may be used to subdue a CSTO member that strays from Moscow's influence.

Conclusion

Similar to many of the Russia's geopolitical projects, it is possible that the CSTO's utility is not derived from the alliance's ability to provide security assurances to its members, but rather the greater political implications that come with CSTO membership. After the expansion of NATO and the European Union, the Russian Federation has found its influence gradually receding in the former Soviet Union. The CSTO presents the Russian Federation an opportunity to translate its soft power and influence into a new political demarcation of the former Soviet Union.

Yet the loss of three CSTO members over the past 25 years hints at an even larger geopolitical crisis—the Russian Federation has found itself increasingly at odds with traditional

allies like Ukraine and Georgia while losing relevance to parts of Central Asia. The continued usage of strong-arm tactics and military intervention in response to unfavorable political developments has lead to the erosion of Russian political capital and influence in the former Soviet Union. Failure to present the tangible strategic benefits of alignment with Moscow and the CSTO will guarantee the further loss of allies in the region and increased isolation for Russia.

Yet despite Russia's challenging geopolitical situation, the creation of the Collective Rapid Reaction Force by the CSTO represents one of the more concrete security initiatives taken by the alliance. Although the CRRF struggles to match the mobility and projection capabilities of NATO's Spearhead, the force is clearly capable of ensuring an effective response to a wide variety of geopolitical challenges - whether it is a crisis in the Caucasus and Central Asia or the sudden thawing of a frozen conflict.

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Failure of Cooperation in Arms Embargo Against China:
Diversion of Interest and Decision Calculus of the European Union and the United States
Zishen Ye

Failure of Cooperation in Arms Embargo Against China: Diversion of Interest and Decision Calculus of the European Union and the United States

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Introduction

Almost three decades after an arms embargo was placed on China by the European Union (EU) and the United States (US), the arms trade between China and some member states of the EU has been thriving for two decades. The intention of this arms embargo is for the US and EU to work together to prohibit China from acquiring advanced weaponry. However, with arms exports peaking at over 400 million euros from the EU to China in 2003,[1] some European nations' blatant violation of the arms embargo against China is a textbook example of the failure of international cooperation. This paper will examine the reason behind this inefficient, if not a failed, cooperation between the European Union and the United States in the arms embargo against China. It will also illustrate the actions and interests of both actors.

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[1] Hancock, Tom. "European Companies Are Supplying China With Billions In Weapons And Military Technology." *Business Insider*, Business Insider, 30 Apr. 2014.

This paper argues that the failure of cooperation was caused by the outweighing of gains over the cost of defection from the European side. Moreover, the diversion of interests between the members of the EU and the US in trading with China exacerbated such decision calculi. More specifically, major arms exporters within the EU regard economic interests as a priority while trading with China, while the US considers security interests as a priority. Hence, such diversion incentivized the lack of enforcement mechanism and vague wording of terms of the embargo from the European side. As a result, China is able to acquire hundreds of millions of euros worth of advanced weaponry from members of the EU every year.

Background

The arms embargo was placed against China in 1989, as a direct response to the Chinese Communist regime's violent suppression of protesters at the Tiananmen Square on June 4th, 1989. On June 26th, 1989, the Council of Ministers of the EU declared an embargo on trade in arms with China.[2] On June 29th, 1989, US President George H.W. Bush used his executive powers to impose a ban on arms shipment to China.[3] These official statements made by the most powerful and influential democratic entities in the world were a clear and strong condemnation of China's human rights abuses, and served as a declaration of solidarity with freedom, democracy, and protection of human rights. Lead by these entities, other democratic countries, such as Japan, also cooperated to impose an arms embargo on China, and states pretended to work together in halting China's military modernization and human rights abuses. Subsequently, all military cooperation, defense-related talks, trades, and conventions between China and advanced democracies had been suspended, jeopardizing millions of dollars of ongoing arms contract for China's trading partners in the West.[4]

Prior to the arms embargo, the US and EU members had been trading, and mostly exporting, weapons to China since their diplomatic ties were established in the 1970s. The defense firms of these states signed lucrative deals with China, and the West was also pleased to embrace a pawn in East Asia to hold off the Soviet Union. Therefore, the gains made both in economic and security interests led to an annual increase in the volume of arms trade.[5]

Several years after the implementation of the arms embargo, Chinese warships armed with French helicopters and German diesel engines began patrolling the Chinese coast. Warplanes equipped with British radars and engines and French missiles were deployed by the Chinese air force. Arms exports from European states to China soared with general trade after

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[2] Council of the European Union. "Council of Ministers Declaration on China - SIPRI." *STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE*, 26 June 1989.

[3] Glass, Andrew, et al. "House Sanctions Post-Tiananmen China, June 29, 1989." *POLITICO*, 28 June 2011.

[4] Hufbauer, Gary Clyde., et al. *Economic sanctions reconsidered: history and current policy*. Institute for International Economics, 1990.

[5] Gill, Bates, and Kim Taeho. *Chinas arms acquisitions from abroad: a quest for superb and secret weapons*. Oxford University Press, 1995.

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the year 2000.[6] Such blatant violations of the arms embargo by major European powers left the United States as one of the very few actors abiding by the arms embargo, despite the declaration on arms embargo is valid until the present day.

Gains, Costs, Defection, and Division of Interest - Decision Calculus of the EU and US

After China fully implemented its economic reforms and opened up its markets to international companies in 1992, foreign firms rushed into this authoritarian nation to take advantage of its cheap labor and unprecedented market potential.[7] Since then, the European Union has placed economic interests as a priority while trading with China, including the trades in weaponry. Although the United States has placed a high degree of importance on economic interests when dealing with China, it also emphasizes security interests in the region. The division of interest between the EU and the US led to the EU defection from the arms embargo against China.

Exacerbated by the division of interests, some members of the EU could enjoy very high gains over costs from selling weaponry to China. On the contrary, selling arms to China has higher security costs than economic benefit for the US. To understand this calculation, it is also helpful to consider the relationship between China, the US and some European member states as multiple two-level games, as discussions of costs and gains continue.

The European Union's Interest

The states in the European Union have very limited, if not nonexistent, security interests in East Asia. Arming China could result in more economic gains than costs, and is unlikely to interfere with the EU's limited security interests in East Asia. Thus, defecting from the arms embargo is unlikely to incur any meaningful costs, but gains.

Regarding the two-level game between members of the EU and the United States, the cost for defection during this cooperation is inexistent. Although these two entities decided to implement an arms embargo and created an image of cooperation, there has never been any legally binding policy to enforce the cooperation on this issue.[8] In fact, the steepest cost that European states have bore includes an attempted persuasion, a vocal condemnation, and a threat to cut off defense cooperation from President Bush, which was never realized.[9] According to Stein's article, "Coordination and collaboration: regimes in an anarchic world," it is fair to say

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[6] Hancock, Tom. "European Companies Are Supplying China With Billions In Weapons And Military Technology."

[7] Foreign Languages Press. "Deng Xiaopings South China tour (Jan. 1992) - China.Org.cn." *China.org.cn*, 19 Apr. 2011.

[8] Ning, Qin. "The Failure of Lifting the EU Arms Embargo against China: The Analysis among Interests, Values and Symbolism." *University of Twente*, UNIVERSITEIT TWENTE &WESTFÄLISCHEWILHELMS-UNIVERSITÄT MÜNSTER, 8 Sept. 2009.

[9] Pemberton, Miriam, and Rachel Stohl. "Wrangling Over Arms Sales to China | IPS." *Institute for Policy Studies*, 21 Nov. 2006.

that the EU decided to defect constantly without losing anything. This is due to the lack of any meaningful enforcement and punishment mechanism.[10]

The states of France, the UK, and Germany are ranked as top exporters of weaponry to China.[11] Given the fact that prominent European defense firms like the BAE Systems, MBDA, Thales, and other firms employ around 500,000 people and indirectly generate 1.2 million jobs in Europe. Politicians and policymakers in Europe have to recognize their economic potential and political concerns.[12] Building onto Putnam's argument on the national and international level negotiations, the domestic benefit for politicians and states will be primarily satisfied with loose enforcement of the arms embargo, which is also a favorable move for the defense firms.[13] This is consistent with defense firms' spending on lobbying in many states in the EU.[14] For the states in Europe, a robust military-industrial complex directly translate to more economic growth and employment opportunities. This would benefit politicians by creating a higher chance of getting reelected. Yet, these arms sellers and politicians do not bear much of the cost for allowing defection in the arms embargo against China to take place.

These domestic factors directly result in the vague wording and lack of enforcement mechanism of the arms embargo, which enabled the failure of cooperation. With the Common Foreign and Security Policy that oversees the arms embargo, nations are free to determine their own interpretations on lethal weapons, and they also get to decide what is considered military use, civilian use, or dual-use technology.[15] Previous policies have demonstrated that China acquired most of its Western weaponry under the guise of dual-use or civilian use technology. In addition, trading weapons from third-party actors such as Pakistan and Hong Kong is also a loophole that China and Europe have used.[16]

On the international level, a two-level game is also being played between China and members of the EU. The arms embargo is a significant obstacle that China and European nations have to face. However, for European states, selling weapons to China opens up many opportunities for cooperation, as other subsequent business deals can generate greater benefits than arms sales alone. The most blatant violation of the arms embargo is the collaboration on the satellite-navigation network, which has vast military potential. In 2003, China pledged to contribute two-hundred million euros to the European Galileo satellite program, which is jointly

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[10] Stein, Arthur A. "Coordination and collaboration: regimes in an anarchic world." *International Organization*, vol. 36, no. 02, 1982, pp. 299–324.

[11] Hancock, Tom. "European Companies Are Supplying China With Billions In Weapons And Military Technology." *Business Insider.*

[12] European Commission. "Defence Industries." *European Commission*

[13] Putnam, Robert D. "Diplomacy and Domestic Politics: The Logic of Two-Level Games." *International Organization*, vol. 42, no. 3, 1988, pp. 427–460.

[14] Rufanges, Jordi Calvo. "The Arms Industry Lobby in Europe." *American Behavioral Scientist*, vol. 60, no. 3, 28 Oct. 2015, pp. 305–320.

[15] Shambaugh, David. "Don't lift the arms embargo on China." *Brookings*, Brookings, 23 Feb. 2005,

[16] "The EU Arms Embargo on China: A Swedish Perspective." *FOI Swedish Defense Research Agency*, Jan. 2010.

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developed by most of the prominent defense firms and the European Space Agency.[17] In fact, the relationship between China and the EU has never been better due to this high level of cooperation.[18]

For many European nations, it is evident that the sales of advanced weaponry have gone beyond arms themselves.[19] Considering that China is now the second largest trading partner for the EU,[20] allowing weaponry to flow into China in exchange for a tighter bond and business deals in other fields are rational and beneficial. Consequently, several official discussions regarding the lift of the arms embargo have been held in the European Union between 2000 and 2005.[21] This sends a clear signal of the desire to defect from the arms embargo and of the gains that come from working with China in a larger scale, including arms trade. This stance remains unchanged. In 2015, the European Commissioner for External Relations and European Neighborhood Policy, Benita Ferrero-Waldner, commented on China and the arms embargo: *"this strategic partnership is so important, but it is being conducted on the basis of an outdated agreement that is simply no longer up to the job."*[22] This official remark sums up Europe's take on the diversion of interests and the possibilities of exporting arms to China.

The United States' Interest

After the arms embargo was placed, the United States implemented it strictly, since its security interests outweigh the economic gains of selling arms. As a key player in the international arena, the US has treated China as a threat to Taiwan, its regional ally that China perceives as a renegade province. As a result, the Taiwan Relations Act explicitly stated that *"any effort to determine the future of Taiwan by other than peaceful means, including by boycotts or embargoes is considered a threat to the peace and security of the Western Pacific area and of grave concern to the United States."*[23] China has always sought reunification with its "renegade province," and the expansion in military power is a direct and useful way to demonstrate its resolve and capability. For the US, a regional ally falling into the hands of a regional competitor would frighten other strategic partners in the region. A rising China can be seen as a great challenge to existing trade ties and foreign ties between American allies, and a

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[17] Lague, David. "SPECIAL REPORT-In satellite tech race, China hitched a ride from Europe." *Reuters*, Thomson Reuters, 22 Dec. 2013.

[18] Ibid

[19] Casarini, Nicola. "The International Politics of the Chinese Arms Embargo Issue." *The International Spectator*, vol. 42, no. 3, 13 Sept. 2007, pp. 371–389., doi:10.1080/03932720701567588.

[20] European Commission. "Top Trading Partners 2016." *European Commission*, 2017.

[21] "The EU Arms Embargo on China: A Swedish Perspective." *FOI Swedish Defense Research Agency*, Jan. 2010.

[22] From a meeting between the European Commissioner for External Relations and European Neighbourhood Policy and the Chinese Foreign Minister.

[23] United States, Congress, Cong., House - Foreign Affairs. "Taiwan relations act: conference report to accompany H.R. 2479." *Taiwan relations act: conference report to accompany H.R. 2479*, US Govt. Print. Off., 1979. 96th Congress.

threat to several military bases in the East Asia. Therefore, allowing China to gain a comparative military advantage over Taiwan and other regional allies is not acceptable for the US.

In the past, the US has always deterred China's effort to gain a competitive edge in the region, and it has never ceased to signal to China its resolve and capability. In 1996, US President Bill Clinton ordered the biggest show of force since the Vietnam War by sending aircraft carriers over the Taiwan Strait during the Third Taiwan Strait Crisis, which served as a signal to the world about how much the US cares about its security interests and presence in the region. In 1995, the US traded over $55 billion of goods with China amid the crisis, and that number has been growing at 10% annually.[24] On the other side, the fact that the US is willing to risk its multi-billion-dollar investment and trade for Taiwan is the strongest evidence that security interests trump economic interests.

Furthermore, according to Lipson's article, the two-level game between the US and China is essentially a prisoner's dilemma in the security arena with many drawbacks. Given the secrecy of security and military institutions, the US is likely to have a hard time observing and measuring China's war readiness and intentions of using arms against Taiwan. As Lipson puts it, the goal of cooperation in security institution is to maximize the difference of gains. In this context, the US would also want to maximize such difference between China and its renegade province, since the US is also selling weapons to Taiwan. For the US, not protecting Taiwan from China could result in devastating tangible and intangible losses, and such a cost is simply too high to accept. Thus, abiding by the arms embargo is a great way to maximize security interest at a small economic cost.

Conclusion

As illustrated, the diversion of interests and the lack of an enforcement mechanism enabled the failure of cooperation between the EU and the US on implementing the arms embargo against China. In the late 2010s, the economic gains of violating the arms embargo still incentivizes some EU member states to sell weapon to China, but China has a shrinking demand for foreign weaponry due to its increasingly modernized and self-reliant military.[25] For the US, although this arms embargo is not being discussed often, it is evident that it did achieve the goal of halting China's military modernization, protecting Taiwan, and satisfying other security interests in East Asia.

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[24] US Census Bureau. "Trade in Goods with China." *US Census*, 2017.

[25] Wezeman, Siemon T. "China, Russia and the shifting landscape of arms sales." *SIPRI*, 5 July 2017.

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**Planting the Seeds for Stability: The Power of Development Diplomacy
and the Impact of U.S. Agricultural Development Policy on Fragile States**
Zach Wehrli

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Introduction

Instances of global conflict have increased dramatically over the last decade.[26] As climate change, population increase, and globalization continue to proliferate over the next century, it will be crucial for stakeholders at every level to reevaluate the best ways to address issues pertaining to global conflict, violence, and state stability. Despite many multilateral and non-profit opportunities for intervention, states will most likely be tasked with mitigating the worst effects of these issues. One way that countries such as the United States (US) can begin to combat global conflict and state fragility is by reevaluating existing development strategies, policies, and budgets. Even a cursory glance at the US foreign development budget illustrates the low priority of current development policies. In fact, despite widespread misinformation among the American public, US expenditures for all international development line items constitute less than 1% of the total annual US budget.[27] Agricultural development policy in particular is an underutilized method of preventing conflict, increasing state stability, and advancing US national security interests in the process. Existing literature has highlighted the links between food insecurity and instability, which means that agricultural development may have the ability to simultaneously improve the lives of millions of civilians across the globe and help the US advance and protect its strategic national security interests, including the global war on terror.

The US has many of these vested global interests, but existing foreign and national security policy relies heavily on American military presence to engage these interests and actors,

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[26] Uppsala Conflict Data Program
[27] Center for Global Development

acting as enforcing agents for US policy and projects throughout the world. This is a costly model; not only is it one of the largest (and continually growing) line items in the US federal budget — falling behind only healthcare and social security — but it can also result in immense human cost in the form of American casualties.[28] Agricultural development may offer an efficient alternative to continuous increases in military spending. If used effectively, it can provide dynamic new opportunities for the US government to continue advancing its strategic national security interests, while simultaneously decreasing state fragility and saving human lives in the process. By reframing agricultural development policy in this context and providing empirical evidence to support this assertion, it may be possible to make investment in international agricultural development more politically appealing.

The world of foreign aid and assistance is a complex one. For clarity, itis important to parse out the differences within this field, highlighting the aspects of foreign aid addressed in this study. The State Department identifies foreign assistance as "the voluntary transfer of resources from the government of one country to the government, or people, of another."[29] Within foreign assistance, the State Department recognizes three subcategories of aid including security assistance, humanitarian assistance, and development assistance – the last of these three is the focus of this study. Development assistance is unique because it supports sustainable increases in living standards and reduction in poverty through economic and social advancement, whereas humanitarian assistance focuses on providing direct assistance to those in crisis. I aim to illustrate the importance of continued and increased levels of US spending on agricultural development policy as both a humanitarian imperative leading to increased levels of stability and a means of increasing US national security in the process.

Through analysis of current US agricultural development expenditures and levels of state fragility provided by the Fund for Peace, I highlight an observable relationship between drastic increases in US agricultural development spending and consistent decreases in state fragility. To make sense of that relationship, however, it is critical to gain a contextual understanding of the existing literature on food insecurity and conflict. First, I synthesize existing spheres of thought on the impacts of food insecurity on what I identify as state fragility. By synthesizing existing literature on the topic, with a special emphasis on work completed by Cullen Hendrix, I provide a theoretical framework through which this real-world data can be analyzed. I then employ themes illustrated by existing scholars in both a quantitative and qualitative context, using Ethiopia, a state considered fragile by the Fund for Peace's Fragile States Index (FSI), as the primary case study. By analyzing the annual fluctuations in stability as evaluated by the Fund for Peace's FSI through the lens of US agricultural development spending, I illustrate that US foreign assistance specifically in the form of agricultural development spending can increase food security, resulting in decreased levels of state fragility, subsequently impacting US national security. In order to eventually bring the focus to US strategic interests and national security, I highlight the links between state stability and strategic US interests, like global terrorism.

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[28] "The Budget and Economic Outlook: 2017-2027," Congressional Budget Office
[29] Smith, F Bureau Briefing Packet

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Ultimately, I conclude with a set of policy recommendations that would serve the national security interests of the United States by increasing the stability of states critical to US national security priorities by combating food insecurity through agricultural development policy.

The first step, identifying existing theoretical frameworks for the relationships between food insecurity and everything from poverty to violent conflict, helps to lay the groundwork for the high level correlations identify between state fragility and US agricultural development spending. There are some important considerations to bear in mind when following this logical pathway, however. First, it is virtually impossible to prove causation between development policies and outcomes, particularly when the state is the unit of analysis. Although the sheer number of variables and factors that contribute to state success or failure make causation unachievable, illustrating the correlation between US dollars spent on agricultural development in country and state stability, contextualized by the existing literature on food insecurity and political instability, will be useful in highlighting agricultural development policies' role in stabilizing fragile states and mitigating the negative repercussions of instability. I am confident that this strong correlation paired with the existing literature on the subject will lead to a compelling argument in favor of US agricultural development spending and policies.

The Existing Literature

Authors such as Todd Smith, Cullen Hendrix, and Henk-Jan Brinkman have made inimitable contributions to the existing body of literature on food insecurity, state fragility, and agricultural development policy. By synthesizing their work to create a foundation for my own data analysis, I can utilize the existing logics articulated by these authors to strengthen my claim that US agricultural development policy has a direct impact on the stability of states in sub-Saharan Africa, which can also be interpreted to mean that increased spending on agricultural development on behalf of the United States should remain a goal of any comprehensive development or national security strategy.

The mechanisms articulated by these authors, especially the ways in which food insecurity results in a variety of destabilizing events, provide the contextual framework necessary for understanding the relationship between US agricultural development spending and decreases in state fragility score in the case of Ethiopia.

Henk-Jan Brinkman and Cullen Hendrix authored one of the most seminal works in the nascent field of food insecurity in 2010, which was eventually published as a background paper in the 2011 *World Development Report*. In it, Hendrix and Brinkman provide evidence for the link between food insecurity and different types of conflicts: civil war, interstate war, regime stability, violent rioting, and communal conflict. In one of the most compelling points in the paper, the authors study the occurrence of violent rioting in 48 different countries, graphing the relationship between these riots and price spikes in agricultural commodities. They find that the occurrence of riots reached its peak during the years with the highest agricultural commodity

prices of staple goods such as wheat, maize, and rice according to the FAO.[30] Another critical takeaway from this working paper is that these riots are most likely to occur in countries without the capacity or infrastructure to foster strong government services — what they identify as low government effectiveness.[31] This concept, that governments must possess the capability to respond to agriculture-related issues, is crucial in the analysis of both Ethiopia and anywhere where capacity and resilience building are the main development or aid objectives. Without the infrastructure to combat political instability as a result of agricultural issues, countries may see an exacerbation of other issues, including violence and poverty.

The conclusions found in the work by Brinkman and Hendrix are important because of the problems they identify. While they are not the only academics to highlight the links between food insecurity and all manner of violent events, they do coherently articulate a critical point for my analysis: food insecurity has the potential to cause violence. For the purposes of this paper, it also makes it possible to question whether or not there are policies and programs that could be implemented to disrupt this causal chain. Ultimately, Brinkman and Hendrix conclude that in order to break the link between food insecurity and conflict, nation-states, multilateral institutions, and NGOs should focus on implementing mechanisms that shield food consumers and producers from short-term price instability.[32]

Here, these authors analyze the cyclical nature of food security and conflict in the Sahel, which encompasses a large swath of Northern and sub-Saharan Africa, including the northern portions of Senegal, Burkina Faso, Nigeria, Ethiopia, Cameroon, the Central African Republic, and Eritrea, among others. They posit two important claims: first, they illustrate that violent conflict is actually a driver of food insecurity,[33] highlighting the hugely undiscussed reality that the relationship between acute food insecurity and violent conflict is a circular, self-perpetuating one.

Secondly, they provide evidence that shows how food insecurity can result in popular mobilization and be a *risk multiplier* for conflict. Hendrix and Brinkman, explicitly and intentionally, dismiss attempted monocausal explanations for violent conflict, instead choosing to argue that food insecurity is a risk multiplier rather than a monocausal explanation for conflict. By adapting their logic here, it is possible to make strong corollary claims for the impact of food insecurity and subsequently the implementation of agricultural development policy, while still recognizing the limitations of causal explanations for violent conflict more generally. The concept of risk multipliers is of particular importance when viewed through the perspective of US policy making. Policy makers and elected representatives constrained by the political realities of a democratic system — especially the continuous election cycles of the American democratic system — have a difficult time endorsing policy decisions that lack short-term gratification or success guarantees. Instead of making false claims about direct causation,

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[30] *"Food Insecurity and Conflict,"* Hendrix and Brinkman, Pg. 5

[31] Ibid.,Pg. 6

[32] "Food and Insecurity and Conflict," Hendrix and Brinkman, Pg. 6

[33] Ibid.,Pg. 1

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academics and policy professionals should embrace this concept of risk multiplication in an attempt to preemptively combat the disastrous effects of under-funded agricultural development policy. In addition to these main points, they provide evidence to suggest that participating in food security interventions or development can help decrease possibilities of conflict, contributing to more stable environments. Hendrix and Brinkman's rejection of monocausal explanations of conflict (an important deviation in conflict literature in the policy space) and claims regarding the benefits of outside intervention provide crucial contextual evidence for claims about the effects of state stability that I make through analysis of the Fund for Peace's FSI.[34]

"When Hunger Strikes" is a more recent piece by Cullen Hendrix, taking the form of a report commissioned by The Chicago Council on Global Affairs through their Global Food and Agriculture Program. Hendrix provides evidence that suggests political instability is a direct cause of food insecurity. In this study, Hendrix analyzes the relationship between food-price shocks in the global south and the occurrence of non-violent and armed conflict.[35] Using the food-price related government overthrows in Madagascar, Haiti, and the Arab Spring as starting points, he finds that food-related protests and riots were directly correlated with price spikes occurring to the FAO Food Price index.

With the support of these case studies and data from multilateral institutions like the World Bank and the United Nations, Hendrix engages in a variety of policy recommendations for donors of international development and food security aid, including: the elimination of export bans, further research on the relationship between food insecurity and political instability, advocacy for the use of regional food balance sheets, the creation of new programs to assist governments in the transition from food subsidies to more sustainable types of aid, and direct US development involvement in the most food insecure regions of the planet —namely sub-Saharan Africa.

Rabah Arezki and Markus Bruckner look at the effects of food prices on democracy and intra-state conflict in over 120 countries from 1970 – 2007. To do so, they:

> "... conduct country-specific food price index that is driven by the variation in the international food prices for a panel of over 120 countries during the 1970-2207. [They] use rigorous panel data techniques that account for both unobservable cross-country heterogeneity and common year shocks, and we identify the effects that international food price variations have on political and social stability from the within-country variation of the data."[36]

Using this methodology, Arezki and Bruckner analyze polity scores and food price indexes according to the FAO and ultimately conclude that increases in food prices in low income countries (LICs), dramatically deteriorate the standing of democratic institutions, while

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[34] "Food and Security and Conflict," Hendrix and Brinkman, Pg. 6

[35] Ibid

[36] "Food Prices and Political Instability," Rabah Arezki and Markus Bruckner, Pg. 6

simultaneously increasing the occurrence of anti-government demonstrations and other forms of civil conflict. In short, they find that food prices impact social and political stability.

Again, we see existing authors completing important and compelling work that highlights the observable relationship between food insecurity and volatile and political stability and civil conflict. With the exception of Cullen Hendrix's "When Hunger Strikes," however, none of these authors provide potential policy applications or study the impact that existing agricultural development policies have had on preventing the types of conflict observed in this study and so many others.

The Existing Literature – Summary

These studies and pieces of literature are instrumental in creating the foundation for my analysis as they provide causal mechanisms and explanations for the relationships that I highlight between US agricultural development expenditures and state fragility levels in sub-Saharan Africa. Despite the great work that has already been completed by these authors, agricultural development and its impact on conflict, violence, and state stability is still an extremely nascent field. By building on the existing literature and engaging with these topics on an analytical level, I hope to fill the important gaps in the literature. In summary, there is little work that has been done on how existing agricultural development policies have *already* helped contribute to state stability, and there is a dearth of research on how agricultural development spending actually works to mitigate the well-documented negative effects of acute food insecurity highlighted by authors like Hendrix and Henk-Jan Brinkman. By using the existing literature as a foundation and starting point for my analysis of US spending on agricultural development, I hope to engage the literature in a new way, discussing not how food insecurity causes conflict but how the conflict caused by food insecurity discussed in the aforementioned papers is addressed by US agricultural development policy. With this, I articulate an explicitly policy-driven final argument: not only does the data show that these types of policies can work, but they already are, which means that US agricultural development policy in particular should be continued and expanded. It stands to reason that if food insecurity is causally linked to outbreaks of violent conflicts, implementing policy that decreases food insecurity and its effects (like food price spikes) can decrease the likelihood of these events. More generally, however, I link the existing strands of thought on this issue. By combining the aforementioned impacts of food insecurity on a variety of different factors and indicators, I paint a more comprehensive picture of its effect on state stability, emphasizing the importance of using agricultural development policy as a diplomatic strategy and foreign policy tool over the next century.

Quantitative Analysis – Ethiopia

With this literature in mind, it is possible to analyze a real world example, which highlights the positive impact of US agricultural development expenditures. To engage in a comprehensive analysis of this impact, a variety of different data sets are necessary to analyze the impact of US spending on agricultural development projects. The first data-set utilized is the

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Fund for Peace's Fragile States Index (FSI), which uses a variety of different indicators to measure the fragility of more than 170 states relative to one another, including the primary case study in this paper: Ethiopia. The indicators used by FSI fall into four categories: *Cohesion* (Security Apparatus, Factionalized Elites, Group Grievance), *Economic* (Economic Decline, Uneven Economic Development, Human Flight and Brain Drain), *Political* (State Legitimacy, Public Services, Human Rights and Rule of Law), and *Social* (Demographic Pressures, Refugees and IDPs, External Intervention). For consistency, I use the aggregate rating of these 12 indicators to highlight the relationship between state stability and US agricultural development expenditures. Further research could analyze other indicators such as state legitimacy, levels of political opposition such as riots and uprisings, the occurrence of political violence in the forms of armed insurgents, terrorism, and political assassinations, or overall confidence in the government. For the purpose of illustrating a high-level relationship between US agricultural development spending and state stability, however, the aggregate rating proves most useful because of its generalizability.[37] By looking at this yearly analysis of individual countries, it is possible to see how state fragility has fluctuated over time, which enables the identification of correlations between decreases in state fragility (practically known as increases in state stability), and American spending on agricultural development projects.

The Fund for Peace data is not without criticism, however, and it is important to address some of the most compelling critiques of this database before engaging in a quantitative analysis of the relationship between this data and US agricultural development expenditures. One of the main critiques of this data is articulated well by Bridget Coggins, an Associate Professor of Political Science at the University of California, Santa Barbara. Coggins argues that many concepts in the ranking remained undefined – from the sources of data for the 12 indicators of fragility itself – making an in-depth analysis of its contents difficult, if not impossible.[38] Additionally, the relationships between the indicators are not defined or explored, and are weighted equally. This makes it difficult to identify differences between types of governance relative to one another. While these criticisms are well-founded, the macro-scale lessons from the index still stand: generally speaking, states at the bottom of the list (determined to have lower levels of state fragility) are typically safer and better governed than those at the top. Therefore, witnessing a state's descent down the list of fragile states is still important to recognize and understand, regardless of the values, scoring, or mechanisms that allowed it to decline in score more generally.

In addition to utilizing Fund for Peace's FSI, data sets provided by the Office of US Foreign Assistance Resources (F Bureau) at the US Department of State are used to investigate the relationship between US government spending and state fragility. Their influence comes from their aggregate nature; they include all US government spending on foreign development, including data on spending on behalf of all agencies. To illustrate the high-level relationship

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[37] Fund for Peace, Fragile States Inde*x*
[38] "Fragile is the New Failure," Bridget Coggins

between agricultural development implementation on behalf of the United States and state fragility, I utilize the *total annual "spent" funds on U.S. Foreign Assistance, Economic Development, Agriculture*.[39] Other authors, particularly Cullen Hendrix and Henk-Jan Brinkman, have offered important insight into the types of agricultural development policies that might be most effective. This is an important question to explore, especially when creating potential agricultural development policies. For the purposes of this paper, however, I am more concerned with highlighting the general trends related to US agricultural development overall, making this aggregate number the most representative indicator.

The office of US Foreign Assistance Resources identifies agriculture as:

"The science and practice of food, feed, and fiber production (including forestry, wildlife, fisheries, aquaculture and floriculture) and its relationships to natural resources, processing, marketing, distribution, utilization (including nutrition), and trade."[40]

Functionally, this broad definition means that this indicator capture any US funds allocated towards to the production and management of natural resources (oil, diamonds, etc.), agricultural commodities (wheat, corn, maize, etc.), and livestock (fish, cattle, pigs, goats, etc.). With this information in mind, here is the quantitative data analysis of US agricultural development spending in Ethiopia.

In 2006, the first year that the Fund for Peace began compiling its FSI, Ethiopia had a raw FSI score of 91.9, which steadily increased every year until 2010, when it stayed relatively even at 98.8, at the time making Ethiopia the 17th most fragile state in the world.[41] In 2013, however, things began to change, with three subsequent years of decline in Ethiopia's fragility score (also known as an increase in state stability) after nearly a decade of steady increases in state fragility, due in no small part to the fractured elites and lack of state capacity mentioned earlier.

Figure 1 illustrates this relationship, demonstrating the relationship between total US expenditures and state fragility score on the USAID indicator *"US Foreign Assistance: Economic Development: Agriculture: Spent."* The United States spent almost nothing on agricultural development projects and assistance in Ethiopia prior to 2013. This changed when the Obama administration increased agricultural development spending in-country from merely $48,324 to $31,000,000. The results of this upsurge in spending, which would have begun to take effect after the end of FY 2013 in October of that calendar year, occurred in tandem with Ethiopia's first extended decrease in state fragility score since the beginning of the Fund for Peace's record of state fragility. As state fragility in Ethiopia continued to decrease in 2014 and 2015, US investment in agricultural development and assistance in the region grew to new heights, reaching 69.155 million in 2014 and 67.198 Million in 2015. Ethiopia's FSI score matched this through an inverse relationship, declining through 2016. Assistance in the region

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[39] *Foreign Assistance Tracker*

[40] Ibid.

[41] The Fund for Peace, Fragile States Index

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grew to unprecedented levels, reaching 69.155 million in 2014 and 67.198 million in 2015. Ethiopia's FSI score matched this through an inverse relationship, declining through 2016.
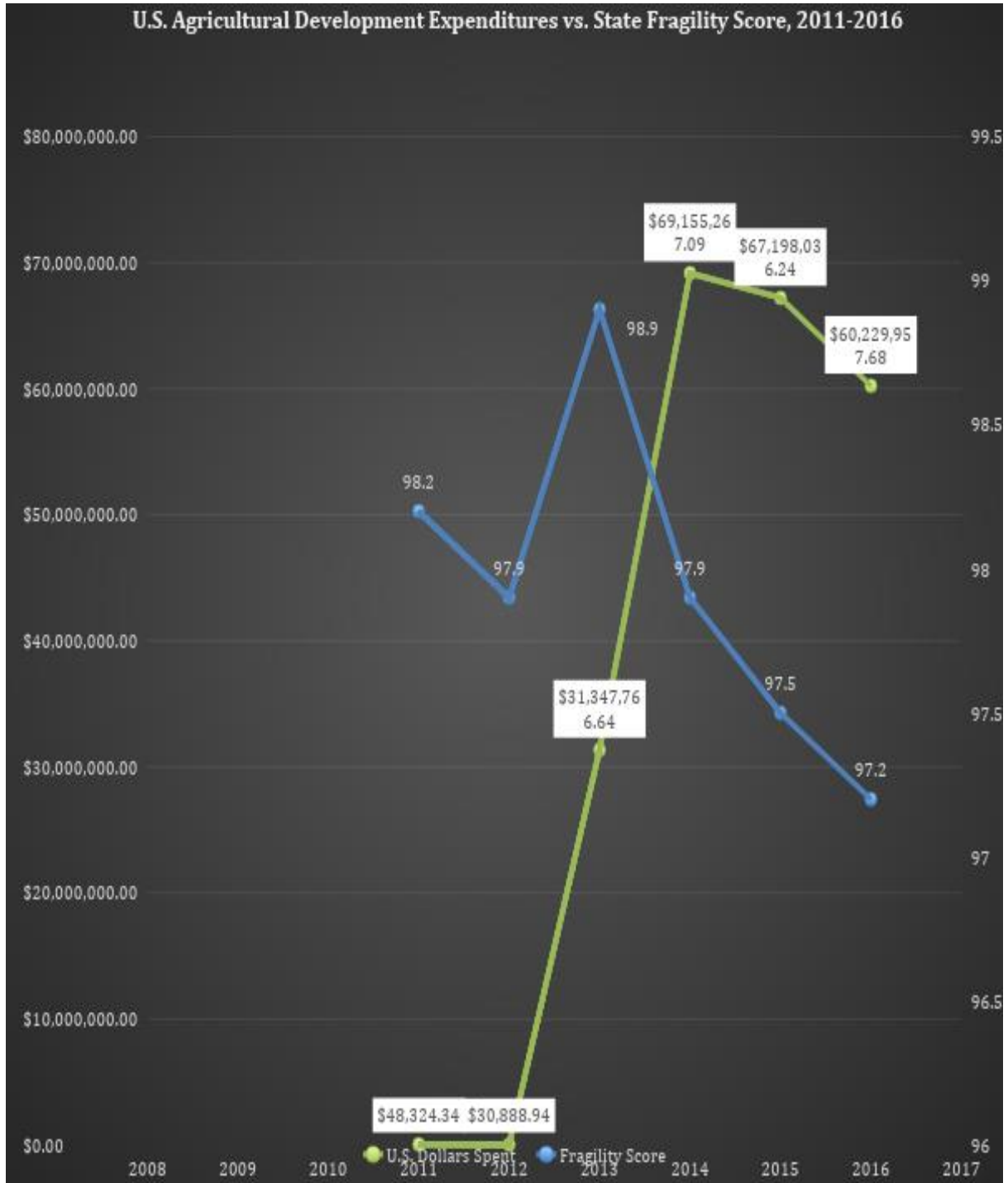

Figure 1
U.S. Department of State, Foreign Assistance
Fund for Peace, Fragile States Index

What was responsible for this decline, and what explains the 2017 increase in state fragility? One answer may lie in the amount of US foreign assistance spending that was occurring at the same time as these fluctuations.

The United States has complex spending patterns and projects, but there was almost no spending on agricultural development projects or assistance in Ethiopia on behalf of US government agencies including the State Department, the Department of Defense, USAID, and the United States Department of Agriculture. US policy in the region changed in 2013, when the Obama administration increased agricultural development spending in-country from nearly zero to 31.47 million.[42] This increase in spending occurred in tandem with Ethiopia's first decrease in state fragility score since the beginning of the Fund for Peace's record of state fragility. As state fragility in Ethiopia continued to decrease in 2014 and 2015, US investment in agricultural development and assistance in the region peaked reaching 69.155 million in 2014 and 67.198 Million in 2015. Ethiopia's FSI score matched this through an inverse relationship, declining at faster rate in 2014 and 2015. While it is impossible to prove direct causation — and if Cullen and Hendrix's well-reasoned argument against mono-causal explanations are to be accepted, there never can and never will be just one cause — it is clear that there is a direct correlation between the amount of significant agricultural development spending in the region and decreased levels of state fragility.

Academics and policy makers should both be asking the same question: is the decrease in fragility score observed after the increase in American aid a statistically significant one? In order to explore the statistical significance of these shifts in fragility score, I used a one-sample t-test to determine whether or not the final fragility score, 97.2 was a statistically significant distance from the average fragility score over a given period of years. In the event that the final recorded fragility score was a statistically significant distance from the mean, it would indicate that the impact of US agricultural development spending was a statistically significant one.

First, I ran a one-sample t-test of the fragility score after recorded US agricultural development aid had been implemented in large numbers (97.2) against the average fragility score over the 11 years that the Fund for Peace has been recording this information (97.14). The resulting p-value from that test .93, which means that the final fragility score is not a statistically significant distance from the average fragility score over the entire 11 years. This is likely because of the outlier fragility score in 2006, when the Fund for Peace scored Ethiopia at 91.9. I have included a visual representation of the one-sample t-test, which can be seen in Figure 2.

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[42] Foreign Assistance Tracker

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. ttest fragility==97.2 if year~=2016

One-sample t test

Variable |      Obs        Mean     Std. Err.    Std. Dev.    [95% Conf. Interval]

fragil~y |       10       97.14    .6934935     2.193019     95.57121    98.70879

    mean = mean(fragility)                                         t =   -0.0865
Ho: mean = 97.2                                    degrees of freedom =          9

   Ha: mean < 97.2               Ha: mean != 97.2                Ha: mean > 97.2
 Pr(T < t) = 0.4665          Pr(|T| > |t|) = 0.9329           Pr(T > t) = 0.5335
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Figure 2, STATACorp
U.S. Department of State, Foreign Assistance
Fund for Peace, Fragile States Index

The purpose of this study, however, is to identify the impact of increased levels of American food aid on state stability rather than analyzing levels of state stability independent of other factors. To reflect this , I ran the final state fragility score of 97.2 against the mean of Ethiopia's fragility scores from 2011-2016, or the only years for which data on U.S. food aid to the country exists. This test resulted in a mean of 98.8 and a p-value of .0196 — well within the range required to indicate that the decrease in state stability found in the years following substantial increases in American agricultural aid to Ethiopia was a statistically significant distance away from the mean over this same period of time. This test indicates that the observed shift over this period of time had a significant impact.

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. ttest fragility==97.2 if year~=2016 & year>=2011

One-sample t test

────────────────────────────────────────────────────────────────────────────
Variable │    Obs        Mean     Std. Err.   Std. Dev.   [95% Conf. Interval]
─────────┼──────────────────────────────────────────────────────────────────
fragil~y │     5         98.08     .2332381   .5215364    97.43243    98.72757
────────────────────────────────────────────────────────────────────────────
     mean = mean(fragility)                                    t =    3.7730
Ho: mean = 97.2                               degrees of freedom =        4

   Ha: mean < 97.2              Ha: mean != 97.2                Ha: mean > 97.2
 Pr(T < t) = 0.9902          Pr(|T| > |t|) = 0.0196          Pr(T > t) = 0.0098
```

Figure 3, STATACorp
U.S. Department of State, Foreign Assistance
Fund for Peace, Fragile States Index

When taken together, the combination of the easily observable relationship between US agricultural development expenditures and the statistical significance of the decrease in fragility score offers important insight into the effectiveness of US agricultural development policy as a whole.

Qualitative Analysis -Ethiopia

In order to fully understand the impact of US agricultural investment in Ethiopia, it is helpful to gain some insight into the country's economic, political, social, and historical contexts. Ethiopia has a total GDP of $47.5 billion with an average per capita income of $505. Ethiopia's population hit a staggering 94,100,756 in 2013 with an annual population growth rate of 2.55%.[43] Its urban population in the same year rested at 18.59%, which means that large swaths of the country still remain classified as rural land. A majority of these rural areas are farming communities. These numbers have likely increased since the World Bank's analysis in 2013.[44] Between 1998 and 2001, Ethiopia experienced over 80,000 deaths as a result of state based violence during the Eritrean–Ethiopian War.[45] As a result of this tumultuous start to the 21st century, Ethiopia's standing in the international community as seen through the perspective of state fragility was bleak, and the country was plagued by continued violence, fractured elites, and

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[43] World Bank Group
[44] Ibid.
[45] Uppsala Conflict Data Program

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a lack of state capacity even after the cessation of hostilities in 2000. Although Fund for Peace did not officially begin tracking and ranking fragile states until 2006, it is easy to identify a clear pattern from that point onward, allowing for educated hypotheses about what the start of the new millennium would have had in store for Ethiopia if the Fund for Peace had been tracking FSI data at the time. Fractured elites, limited state capacity, and vast human rights abuses as a result of the end of the Eritrean-Ethiopian War resulting in Ethiopia climbing to the top of the fragile states list. In 2006, Ethiopia found itself fairly high on the list as the 26[th] most fragile state in the world. Pre-Eritrean-Ethiopian War, however, it is likely that Ethiopia would have found itself even further from the list of the World's most fragile states. As the first decade of the 21[st] century marched onward, Ethiopia saw steep increases in its total fragility index score.

Ethiopia is a particularly helpful example for another reason as well: its location in the horn of Africa means that it is experiencing the same weather conditions currently faced by Somalia, Yemen, South Sudan, and northeastern Nigeria.[46] As of October 2017, a total of 20 million people in all of these countries were on the brink of famine (with the exception of Somalia, which has already declared a famine), making it the largest humanitarian crisis in terms of the number of people involved since World War II.[47] Not only has the drought put these countries on the brink of famine, but terrorist organizations like al-Qaeda have been able to take advantage of the opportunity, gaining ground against weakened state governments. This is a particularly important factor when evaluating the usefulness of agricultural development spending through the perspective of increasing US national security. If agricultural development spending is found to increase resilience to droughts and prevent governments from weakening further and potentially giving ground to armed insurgents, it could be used as an effective strategy to limit the reach or terrorist organizations, particularly in the global south. In addition, more than 5.3 million children are undernourished, with 1.4 million of them at risk of death from severe malnutrition and more than 600,000 of them are at *imminent risk of death from starvation.*[48] Ethiopia, due in no small part to immense agricultural development investment over the last decade, has been able to maintain its food security and keep famine at bay, while Somalia has already officially declared a famine. Because of continued investment in the region on behalf of the United States and other actors, Ethiopia has been able to continue building its resilience – in and of itself an important aspect of global agricultural development policy.

One of USAID's core principles is mitigating violence and conflict, and it achieves this predominately through agricultural development policies that aim to increase resiliency. Resiliency is defined as, "the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth."[49] This is an important concept to consider when

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[46] The Chicago Council on Global Affairs

[47] Ibid.

[48] The Chicago Council on Global Affairs

[49] Resilience in the Face of Drought in Ethiopia: New Evidence

evaluating Ethiopia's ability to respond to the drought as a result of US agricultural development policy. To evaluate Ethiopia's resiliency as a result of USAID's programs, it collected data from the same households, all of which were reached by USAID's Pastoralist Area Resilience Improvement through Market Expansion (PRIME) project, repeatedly during the drought. By controlling for factors like household size, food assistance, education, assets, and the gender of the head of household, USAID was able to identify that households directly benefited from PRIME: they only saw a 4% decrease in food security as opposed to the 30% decrease observed in households that were not reached by PRIME.[50] This is important for two reasons: first it illustrates that there are ways to isolate the impact of US agricultural development policies and spending. Secondly, building resilience through agricultural development is crucial in keeping state fragility low.

First, the level of state fragility found throughout the region makes it possible to illustrate the potential and demonstrate the impact of US spending on agricultural development policy. Secondly, similarities in climate, GDP, population, and religions make it possible to control for some variables, strengthening the validity of the argument as a whole. While these countries are still incredibly diverse, with huge variations in ethnic makeup, GDP, and internal domestic and political factors, any small steps that help control for the massive number of potential confounding variables contribute to the accuracy of the analysis.

Policy Applications and Implications

Agricultural development is an effective way of increasing state stability. Not only does it decrease levels of poverty, conflict, gender inequality, thereby increasing the stability of states, but it can also play a direct role in improving America's national security. The links between radicalism, violent extremism, terrorism, and food insecurity are stark. Ertharin Cousin, previously an Executive Director of the World Food Programme, excellently articulated the reality that when young men are jobless and hungry, they turn to radical groups capable of providing those services in exchange for their support.[51] The United States is still engaged in the global war on terror, with many trials and tribulations to come.. In order to effectively end this global counterinsurgency and combat expansive terrorist networks made more powerful by the global interconnectedness of our world, national security policy must look beyond traditional military strength and formulate dynamic new policies capable of striking one of the core causes of terrorism. Agricultural development can play a strategic role in US counterterror policy, making its investment even more important, as if it were not important enough already. If the United States is serious about finishing the global war on terror, engaging in agricultural development policy and other development diplomacy strategies will be integral to success.

In 2013, a Kaiser Foundation poll found that, on average, Americans believe that the federal government spends 28% of the total budget on foreign aid. In reality, the U.S. government spends less than 1% of the budget on foreign aid. Meanwhile, defense spending

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[50] Ibid.

[51] "Food Aid Cuts 'Making Refugees Targets for ISIS Recruitment'", Kareem Shaheen.

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accounts for more than 16% of the federal budget, totaling $646 million. By investing in agricultural development policy, not only could the United States decreased levels of state fragility, but it could also directly combat IS recruitment and Islamic extremism, which has been linked to food insecurity.[52] The argument for agricultural development can be sold to lawmakers and the public the same way that seemingly uncontroversial increases in military spending are sold: it is an investment in US national security. In addition to increasing our national security, agricultural development policy also contributes the vital tenets of humanitarian aid that runs central to US engagement with the world – saving millions of lives in the process and making the entire international community safer. The US also stands to gain vital new partners and allies, resulting in economic and diplomatic boons that no amount of military intervention can achieve.

Finally the salience of food security issues to countries where the US has vested strategic interests. The following is a direct statement from The Office of the Director of National Intelligence from a 2016 report on Global Food Security:

> "We judge that the overall risk of food insecurity in many countries of strategic importance to the United States will increase during the next 10 years because of production, transport, and market disruptions to local food availability, declining purchasing power, and counterproductive government policies. Demographic shifts and constraints on key inputs will compound this risk. In some countries, declining food security will almost certainly contribute to social disruptions or large-scale political instability or conflict, amplifying global concerns about the availability of food.'[53]

If agricultural development is not effective, it is still vital to US national security interests to begin addressing these issues, particularly as climate change and population increase continues to dramatically alter the political situations in the Middle East, Southeast Asia, and Sub-Saharan Africa. Agricultural development efforts have a unique ability to advance strategic US interests.Compounded by its effects on stabilizing food insecure regions and increasing state stability, agricultural development is a powerful, and drastically underutilized, weapon in the foreign policy and national security arsenals of the United States.

Conclusion

There is much progress to be made in the fight against global conflict, poverty, and instability. There is ample literature to support the claim that strong links exist between food insecurity and increased levels of conflict and state fragility. If that theoretical framework holds, it stands to reason that investing in effective agricultural development policies would result in decreased levels of conflict and state fragility. This logical reasoning is already at play in sub-Saharan Africa, where US agricultural development policy has played an important role in

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[52] Kareem Shaheen, The Guardian
[53] *Intelligence Community Assessment (Pg. 1)*

stabilizing countries. By comparing annual US agricultural spending and annual fragility score from the Fund for Peace's (FSI), the correlation between US agricultural development policy and decreased levels of state fragility becomes clear. Through statistical analysis, I have also demonstrated that the decreases in state fragility seen in Ethiopia as a result of agricultural development spending are not insignificant, making the potential investment in these types of agricultural development policies even more worthwhile.

Ethiopia is just one example of the beneficial impacts that robust agricultural development policy can have. Not only did it play a role in increasing state stability, it also helped advance strategic US national security interest in the region. Through continued funding of international development programs and initiatives, the US is poised to make the world a safer, more stable place, while simultaneously advancing its national security. Because of the strong links between violent extremism and food insecurity, the prevalence on food insecurity in countries vital to US interests, and the assured exacerbation of these issues over the next century as a result of climate change and population increase, the US would be wise to engage in agricultural development efforts at a greater scale. Successful, long-term national security strategy should take all of this into account when evaluating its priorities in the global south, particularly when it comes to the horn of Africa and the Arabian Peninsula. If the US, other countries, multilateral institutions, nonprofits, and NGOs do not begin investing in capacity and resilience building now, especially in the vulnerable and volatile agricultural sector, the likelihood that stability will decrease in large swaths of the global south is virtually assured.

My findings suggest that American disengagement from the international community is dangerous . If the US does not take advantage of its position as a global leader in international development and agricultural technology, the result will be a world with greater political instability.[54] By taking advantage of this opportunity and leveraging the immense power of foreign investment and agricultural development in particular, the United States can save money and lives, both at home and abroad.

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[54] *Reforming and Reorganizing U.S. Foreign Assistance, Conor Savoy and Erol Yayboke*

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The Global Crisis in Syria

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Abstract
Throughout this paper, I will explore the ongoing crisis in Syria, most commonly known as the Syrian Civil Car, and look at the key aspects as well as the global issues that it has presented to the international community. First, I will be giving an overview of the conflict in Syria and a detailed history of the destabilization of the region. Next, I will be using a concept that is used in the textbook "World Politics" by Friedan, Lakes, and Schultz (FLS), where I will be addressing the actors, their interactions, preferences and choices, and the institutions governing their decisions. After that, I will be addressing the human rights violations of the Assad regime, its allies, and the opposition forces in respect to the Universal Declaration of Human Rights (UDHR). After human rights, I will be addressing a conflict resolution strategy that I believe is the most effective on the global scale in reference to Middle Eastern conflicts. This paper's main objective is to explain the complexity of the Syrian Civil War and how it has become one of the greatest and most challenging conflicts of our generation.

The Global Crisis in Syria

The civil war in Syria is a complex, multifaceted conflict with over 470,000 deaths, 5 million refugees, and 6.3 million people displaced from their homes (Human Rights Watch, 2016) which involves many actors each with varying choices and preferences. As the conflict continues, many international institutions such as the United Nations (UN) have been facilitating international talks among the international community; however, due to the differing agendas of the actors, little to no progress has been made in the United Nations Security Council (UNSC). Over the course of this paper, the atrocities exhibited in the conflict will be examined and will provide the details that make it necessary for international collaboration to end the conflict once and for all.

Actors and Interests

Primary Pro-Assad Forces

Syrian Arab Republic: On July 17, 2000, after the death of his father, Hafez al-Assad, Bashar al-Assad assumed the position of the President of Syria under the Ba'ath party, which rules under an authoritarian regime (Central Intelligence Agency, 2017). Upon taking power, Bashar al-Assad and his regime worked towards ridding the former government of corruption. After the expulsion of many government officials; authors Rather, Ali, and Abbas explain, "bribery and preferential treatment at higher echelons of the government" (2015) lead to the protests of the Arab Spring in Syria in 2011 and to the current state of affairs revolving around Assad's regime.

Iran: For many years, Iran has been supplying the Assad regime with weapons and funds and has been working with Syria to keep its economy afloat in the midst of a conflict (Horowitz, 2014). Iran has also been increasing its support for the Assad regime by supplying ground and air components to help keep Assad in power for as long as possible (Fulton, Holliday & Wyer, 2013). Since the Joint Comprehensive Plan of Action (JCPOA), the international community has decreased sanctions on Iran, which has given Iran greater economic leverage than it previously held.

Russia: Russia, the largest and most powerful ally to the Assad regime, has been providing Assad with a "diplomatic shield" in the UN (Laub, 2017). In addition to carrying out airstrikes in support of ground operations, the Russian military has been providing weapons and training to Syrian government forces. According to the BBC, Russia's involvement in backing the Assad regime lies in its desire to keep a power presence in the Middle East, to protect its port in Syria that connects it to the Mediterranean, and to give it a stage to demonstrate its power in the war on terrorism (Doucet, 2016).

Primary Opposition Forces

The Free Syrian Army (FSA): In March of 2017, the Assad regime opened fire on peaceful protesters, firing the first shots of the Syrian Civil War. As a result of this, the Free Syrian Army took up arms against the Assad regime (Laub, 2017). The FSA consists of former Syrian military personnel (who joined the FSA after the war broke out), civilians, and a mix of extremist groups looking to overthrow Assad.

The Kurdish People's Protection Units (YPG): With the unrest in Syria, the Kurdish governing party in Syria was presented with an opportunity to further their goal of reclaiming land from the Islamist rebels in the region of Rojava. As of 2017, the YPG is being armed and trained by the United States, who believes that the YPG is the most capable group in the region to combat the Islamic State (IS) (Laub, 2017).

Turkey: Turkey was one of the main opponents to Assad during the 2011 uprising due to Assad's violent reaction to protests (Zalewski & Spencer, 2011). Turkey began training Syrian defectors in order to create the FSA to combat the Assad Regime and ultimately overthrow the Syrian government. Turkey's main interests are the defeat of the IS and a Syrian regime change (Dombey, 2014).

United States: In 2011, after the Assad regime fired on civilians during a peaceful protest, the Obama Administration condemned the attack and called for Bashar al-Assad to resign (Myre, 2017). As the violence turned to a civil war, the United States, at first, was hesitant to join the conflict because of Former President Obama's plan to reduce its presence in the Middle East. However, after the emergence of the IS in the region, former President Obama ordered the bombing missions against the extremist organization in Syria while negotiating peace with Assad (Laub, 2017). After Donald Trump was elected president, Assad used chemical weapons against unarmed civilians. This sparked the first direct strike on Assad forces by the United States on April 6, 2017. Currently, the United States has been pushing for support in the UNSC to condemn Syria for their chemical attacks; however, most of their attempts have been blocked by Russia (McKirdy, 2017).

Outside Combatant Group

ad-Dawlah al-Islāmiyah (IS): Established in 1999 under the name Jama'at al-Tawhid wal-Jihad, the IS is a breakoff group of al-Qaeda, with greater and more extremist ideals compared to the al-Qaeda terrorist group. In Syria and Iraq, IS' main goal is to establish a caliphate, or state, where it can impose Sharia law. The IS is in conflict with all groups mentioned above and with many smaller groups such as Tahrir al-Sham and Ahrar al-Sham. In 2016, IS began to lose territory in Syria and Iraq through precision strikes, cooperation, and overwhelming force. The IS has been suffering greatly and has lost an abundance of its claimed territories (Laub, 2017).

International Institutions

United Nations: The UN has played an important role during the conflict in Syria. Within the United Nations Security Council (UNSC), there are five permanent members: China, France, Russia, the United Kingdom, and the United States. Each permanent member has the ability to veto any resolution instantaneously without debate. During the Syrian Civil War, Russia has frequently vetoed resolutions regarding the Syria conflict. This can be attributed to the Russian policy, with its main goal being to block American efforts in shaping Middle Eastern politics (Yan, 2013).

Issues of Human Rights in Syria

Since the Syrian Civil War began in 2011, human rights have been a major focal point for advocacy groups and the United Nations Human Rights Council (UNHRC), where abuses have been brought to light against both the pro-Assad forces as well as the opposition forces. The abuses range from torture and inhumane treatment to the killing of civilians with small arms and weapons of mass destruction (WMDs); most notably sarin gas used by the Assad regime in correlation with Russia. The issues of human rights abuses deal directly with the Universal Declaration of Human Rights (UDHR), on all sides of the war. According to the Human Rights Watch (HRW), a non-governmental organization (NGO) that specializes in observing human rights abuses in war zones around the world, the Assad regime has broken seven articles written in the UDHR.

Human Rights Abuses – Pro-Assad Forces

Article 3. In Article 3 of the UDHR, it is stated that "everyone has the right to life, liberty and security of person" (2017). As reported by the HRW, the Assad regime has been indiscriminately targeting and killings civilians. Prior to the outbreak of the Syrian Civil War, civilians gathered in Damascus to peacefully demand governmental reforms. In response, the Syrian army opened fire on the peaceful protesters, killing and injuring several people. The regime has continuously violated Article 3, however due to the lack of support from Russia and China in the UNSC, the killings of innocent civilians cannot be formally acted upon.

Articles 5/6/7. Since March of 2011, HRW reports that around 12,679 people have died while in custody of the Syrian government (2017). These deaths are thought to have been caused by inhumane punishments such as, torture, starvation, and disease due to a lack of medical care (Goldman, 2017). The prevention of medical treatment and inhumane killings directly violates Article 5 that states that, "[n]o one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment" (2017). The detained civilians are unable to speak to family members or lawyers and are being denied the right to be recognized as a person before the law, as stated in Article 6 and 7 of the UDHR, which declares that "everyone has the right to recognition as a person before the law" and that "all are equal before the law" (2017).

The pro-government forces have also been engaged in the unlawful, secret abductions of advocates for rights such as free speech and democracy; two ideas that are currently under attack

from the Syrian government. According to The Washington Post, around 58,000 civilians have disappeared and are reportedly being held in government run facilities without due process (Naylor, 2015). There are few accounts of what occurs within these "detention centers" due to the low survival rate of those detained.

       Article 20. Article 20 states that everyone has to right to assembly, which includes peaceful protests or demonstrations. In 2011, the Syrian army fired into a crowd of peaceful protesters, killing around 44 people (Shadid, 2011). This action taken by government forces stripped its civilians of peaceful assembly, and then triggered a civil war.

       Article 25. Since the start of the Civil War, Assad has ordered the military to target hospitals and schools, preventing medical assistance to patients in targeted hospitals (HRW, 2017). These violations eliminate the rights of medical treatment as set forth in Article 25 of the UDHR (2017).

Human Rights Abuses – Opposition Forces

       Over the many years of the civil war, human rights abuses have increased exponentially; especially among the IS, the FSA, and the Turkish military.

       Articles 3/18. The IS has crossed the Syrian border and conquered land for its self-proclaimed Caliphate. Through its conquest, the IS has forced civilians to conform to their interpretation of Sharia law and killed those who did not (Amnesty Intl., 2016). The IS has abused Articles 3 and 18 of the UDHR that state that "[e]veryone has the right to life" and that "[e]veryone has the right to religion" (2017).

       Article 5/9. As said in the previous section, Article 5 and 9 have to do with the fair treatment of detainees. According to the HRW, some opposition groups have kidnapped and tortured civilians and government workers for ransom (2017). According to an activist known as Mazen, this torture sometimes leads to the death of the captive (HRW, 2017).

       Another human rights abuse under Article 5 that is present in Syria is the execution of civilians via inhuman ways. For example, in a video obtained from LiveLeak, Turkish soldiers were seen throwing women off cliffs and shooting them as they landed (*Turkish army committing war crimes,* 2016).

Governance and Conflict Resolution in Syria

       First, the areas in which governance and conflict resolution has failed will be examined with the example of the conflict in Iraq. The conflict in Iraq was a failure on the part of the US-led coalition because of the lack of preparation for the occupation and transition period. The conflict in Iraq functions as a case study for the major flaws of an invasion and provides insight into what can be changed to increase the chance of military success.

       The Iraq War, also known as the Second Gulf War, began in 2003 when allied forces of a US-led coalition invaded, defeated, and overthrew the Iraqi government. The US-led coalition decided to invade after receiving information that Iraq possessed weapons of mass destruction (WMDs) and that the country's leader, Saddam Hussein, was committing crimes against

humanity (Iraq War, 2017). With the downfall of Saddam Hussein, insurgent groups began to form due to lack of governance. This sparked the post-invasion phase of the Iraq War in 2007 which revealed unseen, extensive troubles. Groups such as al-Qaeda and the IS severely impacted the Iraqi economic buildup and Iraq's ability to create a stable post-Saddam state (World Bank, 2017). Although the Saddam regime was overthrown by allied forces, this intervention largely failed due to increased instability of the state, as well as the region as a whole.

The first plan of action that the international community should take is to approve of a unified post-war strategy regarding the Assad regime. Any strategy must be approved by all five permanent members of the UNSC to ensure its efficacy. International cooperation can lead to global support and greater stability. In her chapter on Global Conflict, Shirley Fedorak suggests, "military intervention is necessary to ensure peace and stability;" however, she also suggests, "military intervention can lead to the further destabilization of an already unstable political situation" (2014). This idea from Fedorak suggests a costly scenario in a UNSC strategy for Syria, and is open to many different conflict resolution strategies. An intervention in Syria could lead to another occupation and insurgency like that of Iraq. Only when the international community addresses the conflict in its entirety and discusses the post-war situation can it negotiate a resolution with tools such as sanctions, military action, regime change, or United Nations peacekeeping missions.

Conclusion

The Syrian Civil War has dragged on for years with no definitive conclusion as of 2018. With the Assad regime and its allies being backed by Russia and a multitude of rebel groups being supported by various other foreign states and terrorist organizations, the war may last for an extensive period of time, given the abilities of each of the actors to finance the war. The horrendous acts of human rights violations must be addressed by the international community without bias. In order to resolve the conflict in Syria, there needs to be months of collaboration and planning that is not currently present in the international community.

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Compliance and Consequence: The Coexistence of Neoliberal Institutionalism and Realist States in a Nuclear World

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Abstract

The Preparatory Commission for the Comprehensive Test Ban Treaty Organization (CTBTO) was established to stop the use of nuclear testing as outlined in the Comprehensive Test Ban Treaty (CTBT). At present, the CTBT has 166 state signatories, however, without the addition of the eight Annex II states (states that must ratify the CTBT for it to enter into force: United States of America (USA), China, India, Pakistan, Israel, Democratic People's Republic of Korea (DPRK), Iran, and Egypt), the CTBT cannot be fulfilled. The CTBTO is a liberal institution amid a realist-dominated world and without a proper understanding of the dynamics of this relationship, the CTBT will fail to be a successful and monumental document for the non-proliferation of nuclear weapons. The goal of the CTBTO is to end the 20+ year delay the CTBT has seen since its original adoption in 1996. Special attention ought to be placed on compliance with international treaties and why these consequences are not realistic. This paper looks at the existence of liberal institutionalism in a realist world. Liberal institutions succeed when clearly defined verification is instituted. Additionally, there is an exploration of the relationship between liberal institutions and realist states. The liberal institutional perspective is that international institutions are created out of the self-interest of states (Stein, 1999). The realist perspective in this paper will be offensive realism. Proponents of offensive realism believe that states act to gain as much power as they can in order to maintain security (Mearsheimer, 2013).

Introduction

Governments must recognize the mutual benefits that exist from non-proliferation. In August of 1942, the Manhattan Project was established in the United States, which would produce the world's first nuclear weapons, that were dropped on Hiroshima and Nagasaki in August 1945. In August of 1949, the Soviet Union tested its first nuclear weapon, giving both Cold War powers nuclear weapons (ICAN, 2017). In October of 1952, the United Kingdom tested a nuclear weapon, becoming the third nuclear-armed state. In 1960, France joined the nuclear powers with China following four years later in 1964. By July 1968, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) opened for signatures. Under Articles I and II of the NPT, the nuclear-armed states agree not to aid non-nuclear-armed states in the development of nuclear weapons and non-nuclear weapons states agree not to establish nuclear weapons programs (*The Nuclear Nonproliferation Treaty,* 2012). However, in May of 1974, as a non-signatory to the NPT, India conducted its first nuclear test. Twelve years later in September of 1986, it was discovered that Israel had a nuclear weapons program as well, although Israel has not confirmed the existence of its program. By July 1996, the debate on the use of nuclear weapons was brought to the International Court of Justice, later that year on September 24, the CTBT opened for signatures (ICAN, 2017).

On November 19, 1996, twenty-five days after the CTBT opened for signatures, the CTBTO was adopted (CTBTO Preparatory Commission, 2011) to make preparations for the entry into force of the CTBT and ensure once in force the CTBT would be operational. Almost 21 years later in 2017, the CTBT has still not been employed ("Status of Signature and Ratification"). While the organization has seen an increase in state signatories, the failure of certain Annex II states, all of which are required by law to legitimize the CTBT, to sign and/or ratify the treaty has prevented the CTBT from entering into force. Despite this, the CTBTO is still serving its purpose, albeit not its full purpose, which can only be achieved through complete ratification.

Literature Review

Daniel Verdier, a Political Science professor at the Ohio State University, wrote an article titled "Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime" that delves into the struggles of compliance on the international stage. Verdier outlines the importance of having clear methods to gain the compliance of realist states for a liberal institution. He accomplishes this through his analysis of the different mechanisms – multilateral, bilateral, or exclusion – used for the adherence of states to the NPT. Multilateral methods include creating treaties between multiple states. Bilateral methods include creating additional treaties between two specific states in addition to the main treaty. Exclusion methods include avoiding the acquisition of a state's signature because it would be detrimental to the organization. The concepts outlined in Verdier's article on the NPT can be transferred to the CTBT because Verdier's concepts have the potential for freeing the CTBT of the twenty one-year roadblock it has been facing. By understanding the different mechanisms at play and the correlation that

exists between what governments see as beneficial and their ability to effectively comply with a liberal institution, the CTBTO can become one step closer to becoming effective.

Additionally, many scholars have provided insight into international theories. The application of different theories can bring about different results for the same research, but here the application of John Mearsheimer's offensive realist theory will be applied. The definition of offensive realism in Mearsheimer's article "Structural Realism" and Robert Jervis's article "Realism, Neoliberalism, and Cooperation: Understanding the Debate" is used. According to Robert Jervis: "…offensive realists think that the conflict we observe in international politics represents real incompatibility between desired states of the world," (50). Proponents of offensive realism believe that states act to gain as much power as they can in order to maintain security (Mearsheimer, 2013).

The definition of neoliberal institutionalism being used in this paper stems from the work of Arthur A. Stein in *The Oxford Handbook on International Relations*. In describing the benefits of liberalism in international politics, Stein states, "the heart of neoliberal institutionalism is a view of international institutions as the self-interested creations of states," (208). Stein's definition is cited as an attempt to create a balance between liberal institutionalism and realist states.

A Neoliberal Institution in a Realist World

The CTBTO is based on the neoliberal institutionalist theory that a state's best interest is to disarm (Verdier, 2008). However, the organization faces opposition from realists, who correlate weapon acquisition with power. Governments that associate nuclear weapons acquisition with power follow realist policies. This can be seen in all the Annex II states that have yet to ratify the CTBT. All these states either have nuclear weapons programs or have previously had them.

The role of the CTBTO is to persuade states to recognize the gains they would receive from ratifying the treaty and putting into effect the CTBT. Entry into force is accomplished by changing what governments see as beneficial. How these gains and losses can be presented to state actors is outlined by Verdier, where he presents the NPT as both a bilateral and a multilateral treaty. Verdier shows how changing a state's perspective is complex. Whether states negotiate bilateral attachments to a treaty is dependent upon whether the benefits of having a state be a signatory to the treaty outweigh the costs. Some states have resisted signing and/or ratifying the CTBT since the treaty opened for signatures. It may be in the best interest of the CTBTO to consider ways to persuade these holdout states with the attachment of bilateral treaties. Devising ways to obtain ratifications may help further the process of placing the CTBT into law. A method used by the CTBTO to attain ratification could be the addition of bilateral treaties to the CTBT. Bilateral treaties could be attached to the CTBT for those states who have not signed. The CTBT could benefit from bilateral treaties between India and Pakistan as well as Israel and Iran. These states have a deep distrust in one another, and the addition of bilateral treaties between these states may persuade them to sign the CTBT.

Annex II Signatories Needed	Nuclear Weapons States
USA	USA
China	China
India	India
Pakistan	Pakistan
Israel	Israel
DPRK	DPRK
Iran	Russia
Egypt	UK
("Status of Signature and Ratification")	France

Table 1. Compares states with nuclear weapons to those needing to sign the CTBT (*Nuclear Weapons,* 2017).

Additionally, the Annex II states that have failed to sign the CTBT are mainly those currently possessing nuclear capabilities with the exception of Iran and Egypt (see Table 1). This again aligns with an offensive realist perspective where an emphasis is placed on a state's power (Mearsheimer, 2013). It is the realist perspective of Annex II states that is preventing the CTBT from reaching universal implementation.

A realist perspective shows challenges to the CTBTO while a neoliberal institutionalist perspective shows how the organization operates. The CTBTO focuses on the reduction of uncertainty in a world with nuclear weapons and solving collective-action problems. By creating a forum in which governments discuss disarmament, the CTBTO is striving to create more certainty. Without nuclear weapons testing present or allowed, the organization will effectively put an end to the symbolic power that comes with it.

Likewise, the CTBTO is attempting to solve a collective-action problem by being an organization in which state parties agree to the benefits that will arise in a nuclear-test-free world. Even a small nuclear explosion impacts a wide range of people through wind currents, which carry radioactive particles throughout the entire world. This results in detrimental health effects among those who live in the fallout zone, the area where high levels of radiation from a nuclear explosion reach. This can be seen from the victims of Hiroshima and Nagasaki. The enforced CTBT, which would rely heavily on scientific data through International Monitoring Systems (IMS), makes it more difficult for countries to test nuclear weapons undetected.

There are four types of IMS systems the CTBTO is in the process of implementing: radionuclide stations, hydroacoustic stations, infrasound stations, and seismic stations. Radionuclide stations detect radioactive particles in the air. The composition of the air samples taken by these stations help determine whether a nuclear explosion has occurred ("Radionuclide Monitoring", 2010). In addition, hydroacoustic stations check for underwater nuclear explosions. Hydroacoustic technology is "used to measure water pressure changes caused by sound waves," ("Hydroacoustic Monitoring", 2010). Furthermore, infrasound stations watch for atmospheric

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nuclear explosions by analyzing low-frequency acoustic waves. The use of these stations help the CTBTO locate where the explosion occurred ("Infrasound Monitoring", 2010). Rounding out the detection apparatus, seismic stations check for underground nuclear explosions using a seismometer. Through analysis of the data received via the seismometer, it can be determined whether the activity was caused by a naturally-occurring event or man-made activity, such as a mine explosion ("Seismic Monitoring", 2010).

Realism and neoliberal institutionalism both exist within the CTBTO as it attempts to try to gain ratification of the CTBT. The CTBTO exists within the realm of neoliberal institutionalism; however, in trying to gain full ratification of the treaty, the organization must work to change the perspective of states. The CTBTO needs to convince governments that the CTBT, once in effect, would be of great benefit. Finding the balance between realism and neoliberal institutionalism is what will best aid the CTBTO in moving forward to gain complete ratification.

Findings

In an interview with Jenny Nielsen, an affiliated researcher at the CTBTO, she was asked questions concerning specific governments' evasion of ratification, reasons for evasion, and paths taken to curb state resistance to signing. Studying the current conduct of the organization helps determine what needs to be done to ensure that the CTBT is effective.

In addition to the interview, relevant statistical data provided a broader image as to what is occurring within the organization. Information regarding the completion of the IMS and the number/location of IMS stations were received. All of this data was found in the CTBT and was provided by the CTBTO Preparatory Commission.

The verification of the CTBT first presents itself under Article IV Verification (CTBTO Preparatory Commission, 2011). This section of the treaty extensively details topics such as the establishment of the IMS, funding verification, and on-site inspection procedures with the cooperation of states. In addition to verification listed within the treaty text, the CTBT provides "Protocol to the Comprehensive Nuclear-Test-Ban Treaty" (CTBTO Preparatory Commission, 2011), which outlines protocol that is to be followed in the establishment and conduct of the IMS (CTBTO Preparatory Commission, 2011).

According to the May 10th talk held by the Vienna Centre for Disarmament and Non-proliferation on the entry into force of the CTBT, 90% of all IMS stations have been established. There are several states, including Iran, that have yet to establish IMS stations. The states that have established IMS but have not signed the CTBT include: USA, Israel, Egypt, Pakistan, and China. The potential power of the CTBT and its verification regime is illustrated by the fact that countries that have not fully agreed to the terms of the CTBT often build IMS stations, as outlined within the treaty. However, full verification, which includes on-site inspections cannot be implemented without the entry into force of the CTBT (VCDNP, 2017).

The primary focus of the interview with Nielsen was on verification. Nielsen described the CTBTO as heavily reliant on technologies such as seismological, hydroacoustic, infrasound,

and radionuclide stations (CTBTO Preparatory Commission, 2011). Nielsen further claimed that the CTBTO advertises itself as a technical organization and not a political one, because the technology is non-discriminatory. The CTBTO is a transparent organization through the use of its verification (Nielsen, 2017). The International Data Centre is constantly receiving input from the IMS, and when information is detected by the system, all raw data is sent out to the respective state governments (Nielsen, 2017).

Through having a verification system which employs highly technical methods, it is nearly impossible to circumvent the rules outlined within the CTBT. Since the initial opening for ratification for the CTBT, the DPRK has been the only country to conduct nuclear tests. According to Nielsen, every test that the DPRK conducted since the establishment of the IMS has been detected via various IMS stations in the vicinity of the DPRK. This data has been used to determine the exact time and location of the tests and the magnitude of nuclear weapons tested by the DPRK (Nielsen, 2017). This shows that the verification regime established by the CTBT has the ability to effectively monitor state compliance.

What was not found among the research conducted was specific consequences that would occur for failure to comply with the treaty. Nielsen believed that there was "a strong international norm" against nuclear weapons use that would dissuade any state from conducting tests and if a state did, the consequence would be strong international backlash. Additionally, Nielsen stated that like any other treaty, if a state was not complying with the CTBT, the United Nations Security Council could take measures to ensure compliance; this would most likely take the form of sanctions.

While these both outline theoretical consequences for lack of compliance, a lack of specificity is cause for concern. Without any consequences specifically outlined, a state will be less likely to comply if it will not be reprimanded for its actions. The existence of strong international standards against a given action with potential backlash by international community for breaking that norm does not count as a consequence.

The existence of a clearly outlined verification regime within the CTBT text supports the hypothesis that liberal institutions succeed when clearly defined verification is instituted. Since the CTBT opened for ratification in 1996, the only state to have conducted nuclear tests is the DPRK, which many scholars and policy makers consider an outlier. This hypothesis is only partially confirmed because the CTBT has yet to be implemented. Therefore, this hypothesis could be adjusted to state that neoliberal institutions succeed when clearly defined verification is instituted and when there is a strong international norms aligning with the organization's mission.

Compliance and Consequences

Through analysis of the work presented, it is apparent that there is a tension between the coexistence of realist actors and neoliberal institutions. Many non-proliferation treaties fail because they lack a solid enforcing body. For a treaty to become an effective force on the international stage, state governments need to voluntarily give up some of their power. If a state

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government does not see this as being in their best interest, there is little that can be done to force them to reconsider. Overall, strategies should exist to ensure the compliance of a treaty for it to be effective. There are several methods by which this could be accomplished, such as specifically explaining how states are expected to comply and what specific measures can be taken to ensure state compliance ("Status of Signature and Ratification," 2010).

Verdier further emphasizes the importance of compliance. Compliance may be gained through the addition of bilateral treaties to a multilateral treaty. By adding bilateral treaties between enduring rivalries, these states would be more likely to comply after reaching a mutual agreement and thus build a new level of confidence between them. Bilateral treaties could be beneficial between India and Pakistan as well as between Israel and Iran.

Another issue preventing the creation of an effective balance between neoliberal institutionalism and realist states is the ability to layout and enforce consequences for not complying. The lack of consequences leads states to question the legitimacy of the organization or treaty to which they are a member. This ultimately creates an imbalance between neoliberal institutions and realist states, which is seen through yet another nuclear missile launch by the DPRK on September 3, 2017 (Lee, 2017). This goes against an International Court of Justice Advisory Opinion from July 8, 1996, which stated the "threat or use of nuclear weapons was contrary to international law," (Koplow 174, 2014).

The inability for treaties to have consequences makes international treaties only effective when states willingly comply. Because consequences cannot be realistically tied to international treaties, once the CTBT is in force, it is at risk of failing. The only way for the CTBTO to prevent the failure of this treaty is to continue ensuring states that it is in their best interest to comply with the principles outlined in the CTBT. This compliance can be achieved by showing states that the IMS has the ability to accurately detect any nuclear activity. By recognizing the inability to circumvent the IMS, states should voluntarily comply to the CTBT. Voluntary compliance is the only mechanism that can prevent the failure of the CTBT and voluntary compliance is not guaranteed.

Conclusion

The coexistence of neoliberal institutionalism and realist states can be successful if there are clear standards to adhere to. Vague language and the inability to follow through on enforcement will lead to the collapse of neoliberal institutions. By focusing on and minimizing ways to circumvent compliance, a neoliberal institution can increase its chances of remaining an effective and relevant tool on the international stage. This will prevent the institution from become useless and unimportant.

The CTBT is a unique document that has taken over 21 years to enter into force. The work that went into the CTBT should not be wasted and time should be spent ensuring that the document will be effective once it becomes official and binding. There needs to be a focus on any existing loopholes and the ability to ensure that no test can go undetected via IMS. By understanding the details of how states will comply and how states are to implement what is

outlined by the CTBT, then the CTBTO will be well on its way to creating a nuclear test-free world.

The CTBT has the possibility to become the treaty that effectively reduces and eliminates the testing of nuclear weapons through the successful implementation of all IMS world-wide and on-site inspections. However, steps must be taken to ensure that it will be a success. The CTBTO should focus on ways it can effectively and realistically see the coexistence of their liberal institution with realist states. This can be done by finding ways to have the remaining IMS stations built and have the remaining Annex II states sign and ratify the CTBT, so on-site inspections can begin. This can be most effectively achieved by adding bilateral treaties to the CTBT between enduring rivals.

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Re-evaluating the Efficacy of Targeted Killing

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Introduction

The purposeful killing of select individuals is a cornerstone of modern counter-terror and insurgency doctrine. The CIA's drone fleet strikes targets across the globe, while Israeli strikes on Hamas leadership have become so routine as to be compared to "mowing the grass" (Inbar & Shamir, 2014). Despite the ubiquity of targeted killing, the academic community is divided as to its effectiveness. This article seeks to demonstrate that, as the literature on targeted killing has matured and become more rigorous, the consensus has shifted from seeing targeted killings as an ineffective or counterproductive measure to viewing them as an effective tool. After reviewing the early arguments against targeted killing, this article assesses these claims in light of more recent research. It explores why and how targeted killings aid security forces and concludes with four policy lessons.

This paper uses the term "targeted killing" to refer to intentional strikes on high-value militants, generally leaders. The more limited term "decapitation strike" refers only to attacks on the most senior leader of an organization. The term "militant" is preferred to describe targets, as the groups this paper deals with blur the lines between insurgents and terrorists. This paper is restricted to concerns about the effectiveness of targeted killing as a counterterrorism and counterinsurgency strategy. It does not discuss the legality or morality of targeted killing.

Rigorous study of targeted killing is a recent phenomenon. Although targeted killing is a practice from time immemorial, systematic large-scale programs directed against militant groups are a product of the 21st century. The modern Israeli program, one of the earliest, began in 2000 as a product of the Second Intifada (David, 2003, p. 1). The first American drone strike outside of a military operation was in 2002 (Sifton, 2012).

Early academic works on targeted killing pushed back against their already extensive use. Stephanie Carvin (2012) noted, "[I]t is not difficult to discern that the overwhelming number of empirical studies do not support the idea that targeted killings are an effective counterterrorism tactic" (p. 542). In this early phase, three arguments against targeted killing developed. The first and simplest was that it was generally ineffective. The second was that it was specifically ineffective against certain groups. The third was that targetted strikes create a backlash that outweighs any benefits.

The first and most fundamental criticism of targeted killing is that it simply does not produce positive outcomes. One study on the protracted Israeli program found that targeted killings neither significantly increase nor decrease the level of violence (Hafez & Hatfield, 2006, pp. 377-378). Another work on the same program goes further and argues that strikes increase the expected rate of suicide bombings (Kaplan, Mintz & Mishal, 2005, pp. 232-233). Jenna Jordan (2009) found that groups that suffer leadership decapitation are 20 percent less likely than those who are not struck to be completely inactive in the two years following the strike (p. 746). Thus, Jordan concluded that targeting leadership is a counterproductive policy.

The second, more nuanced, argument concedes that targeted killing may be effective against some organizations. However, it contends that other militant organizations are resistant or even immune to the damage targeted killing inflicts due to their age, size, or ideology. Older organizations have had time to establish procedures, a bureaucracy, and a pool of veteran replacements, making the role of any one leader less vital. Jordan (2009) found that increased organization age reduces the likelihood of complete collapse after the death of a leader (p. 741). Likewise, larger groups are generally more dispersed and complicated; therefore, they may be more resilient when a single leader is killed. Jordan (2009) found that decapitation slightly increased the rate of collapse for groups up to 500 members (p. 747). However, for larger groups, leadership decapitation does not increase, but instead reduces the rate of collapse by up to 46 percent. Thus, Jordan concludes that against any substantive foe, decapitation is counterproductive. Lastly, some argue that certain ideologies confer increased organizational resilience to decapitation as followers are bound together by a common cause greater than any one leader. Exactly which causes have this impact is debated. Jordan (2009) argues that religious

groups and separatist are particularly resilient to decapitation-induced collapse (p. 748). Jeremy Weinstein (2006) instead argue that the mass appeal of communist insurgencies makes them uniquely capable of absorbing the shock of decapitation (pp. 20-31).

The third criticism, the backlash argument, holds that the net impact of strikes is negative due to increased recruitment, retaliatory violence, and weakened norms that protect leaders. Adherents of this position argue that the outrage and collateral damage generated by strikes produce more recruits and support for militant groups (David, 2003, pp. 8-9). For instance, they hold that while Israeli strikes kill individuals, the recruits generated more than compensate for the few militants killed (Kaplan et al., 2005, pp. 232-233). Additionally, militant groups might retaliate by increasing violent activity to demonstrate strength, show defiance, and avenge the fallen (Byman, 2006, pp. 99-100). In her work, Carson (2017) finds that al-Qaeda responds to the killing of a leader with an increase in violence (p. 213). Mannes (2008) proposes that religious groups are likely to increase violence in response to the death of a leader, but his findings are inconclusive (p. 43). Steven David (2003) attempts to link four specific Israeli strikes to major episodes of Palestinian violence (p. 9). Carvin (2012) proposes that targeted killing weakens norms against killing political leaders and thus invites retaliatory assassination attempts on public leaders (pp. 536-537).

This early consensus that targeted killing is at best useless, and possibly counterproductive, has been challenged by more recent research informed by better data, more realistic measures, and increasingly sophisticated analysis. Given the vanguard nature of their work, early authors had limited data (Carvin, 2012, p. 546). Thus, early efforts were often case studies or comparisons, which, due to their small scale, produce conclusions that cannot be generalized (Carvin, 2012, p. 547-548). Carvin (2012) acknowledges Jordan as a pioneer in 2009 for her large dataset of 298 strikes, but she also argues that Jordan "seems to be missing the forest for the trees" because Jordan focused purely on individual strikes and not on campaigns (p. 546). Early works frequently fixated only on whether leadership removal led directly to the collapse of the targeted group. It is this logic that leads Jordan (2009) to conclude that targeted killing is a failed strategy, since it does not guarantee the disintegration of the target group within two years (pp. 753-754). Thus, Jordan is criticized for using unrealistically high coding standards of success (Johnston, 2012, p. 49; Price, 2012, p. 13). A more nuanced analysis indicates that decapitation strikes are correlated with increased organizational mortality rates (Price, 2012, p. 43). Furthermore, there is evidence that successful high-level decapitation strikes increase the probability of government victory that year by 32 percent (Johnston, 2012, p. 63). Targeted killings may not guarantee victory, but they appear to increase its likelihood.

It may be true that some groups are more resilient than others to the effects of targeted killings; however, the exact characteristics that correlate with militant group durability are contested. The one point of consensus is that groups that depend heavily on a single highly charismatic leader and their cult of personality are especially vulnerable. The collapse of the Shining Path in Peru after its leader Manuel Guzman was captured is a classic example (Cronin, 2009, pp. 18-19). It is logical that groups that are heavily invested or centered around the leader

suffer more when the leader is killed, but that is where agreement ends. Early assertions that age, size, or type of group are correlated with resilience to targeted killing have been qualified or contradicted by further research. For instance, Johnston (2012) shows that even groups over ten years old suffer and are more likely to be defeated after a leader is killed (p. 74). Jordan's conclusion that sufficiently large groups benefit from decapitation strikes is directly contradicted by Price's (2012) latter finding that larger organizations do not fare better than smaller groups after a leader is killed (pp. 38-39).

The backlash argument remains mostly theoretical with little empirical evidence of a consistent trend of increased militant recruitment or material support after a leader is killed. While targeted killing is often unpopular in the target area, it does not appear that such sentiments translate to increased militant membership or mobilization (Johnston & Sarbahi, 2016, pp. 211-212). If there was a backlash effect, it should be particularly visible after a failed strike. In such a scenario, the negative impacts of a strike, such as civilian casualties, would occur and there would be no actual damage to the militant organization. Yet, research shows no significant increase in conflict intensity or the number of attacks after failed attempts to kill leaders (Johnston, 2012, p. 68). Nor has Carson's (2017) argument that militant groups will retaliate and increase violence in response to strikes been substantiated (Hafez & Hatfield, 2006, p. 378). Instead, Carson has been criticized for overstating the implications of statistically weak results gleaned from only ten data points (Forst, 2017, p. 222). As Forst (2017) rightly notes, "Failure to find is not at all the same as a finding of failure." (p. 222). Instead, as will be discussed below, the balance of evidence suggests that strikes reduce militant violence.

Later research has generally contradicted earlier efforts and indicates that targeted killing is, in fact, effective. Thus, the logical next question is, "why?" The simplest reason is that targeted killing programs degrade militant leadership. Militant groups have limited recruitment pools and few skilled leaders. Eventually, a sustained program will eliminate the most competent leaders the militant group has. When leaders are replaced by less talented replacements, the group suffers (Johnston, 2012, p. 52). For an illustrative example, when Abu Musab al-Zarqawi of al-Qaeda in Iraq (AQI) was killed, his replacement, Abu Ayyub al-Masri, was a far less effective leader and his tenure marked a low point for al-Qaeda in Iraq. More generally, targeted killing programs often seek to neutralize other militant specialists beyond just leaders. Militant groups have limited numbers of skilled members such as bombmakers and forgers (Byman, 2006, p. 103). Eliminating these individuals degrades the entire organization's capabilities. Specialists must be trained, they cannot be replaced by generic recruits (Byman, 2006, pp. 103-104). Even if a militant group has an extensive supply of talented replacements, it will still suffer. Each dead leader means a loss of experience and the connections that they have developed.

Targeted killings inhibit centralized control and can lead to groups splintering. Only the most organized militant organizations have formal succession protocols in place. The covert and dispersed nature of militant organizations, combined with their heavy emphasis on personal networks, make establishing such protocols difficult (Price, 2012, p. 18). Militant groups are not

like corporations and governments with clear and overt structures. Therefore, power transfers and successions are often fraught for militant organizations. Leadership turnover increases the likelihood of the group collapsing and killing leaders has a particularly pronounced impact (Price, 2012, pp. 41-42). When decapitation does cause splintering, the smaller, more diffuse, fragments lack the capability to launch large attacks or sustained campaigns. While splintering a group may eliminate the possibility of a single decisive victory, such victories are rare when dealing with militant groups. Instead of gambling on decisive victory, it is more practical to fracture large militant groups and then attempting to defeat the fragments in detail.

Beyond the damage dealt to the organization, targeted killings suppress and disrupt militant violence. Regardless of other benefits, this aspect alone makes targeted killings a valuable tool for combatting militants. The unexpected death of a valued leader disrupts the regular function of the target organization and interferes with its operational capacity. In his analysis of 118 decapitation attempts, Johnston (2012) finds that killing a leader results in decreases of both the number and total lethality of attacks (p. 65). Supporting this conclusion, a more specific study on drone strikes in Pakistan found an approximate 25 percent decrease in militant lethality in the week following a strike (Johnston & Sarbahi, 2016, p. 212). Perhaps early theories were correct in arguing that targeted strikes induce the desire for violent retaliation, but they failed to appreciate the difficulties of realizing such intentions.

These findings indicate that targeted killings not only inhibit militants' ability to carry out attacks (lower volume of attacks) but leaves them unable to compensate by increasing the quality of attacks that are conducted (lower total lethality of attacks). Research on Palestinian reactions to Israeli strikes indicates that, after a strike, the number of intended attacks is not decreased, but fewer are successfully carried to completion (Jaeger & Paserman, 2009, p. 340). To the extent this finding can be generalized to other conflicts, it suggests that the lack of backlash is due to reduced militant capability, not diminished will.

However, it is essential to emphasize the temporary nature of this disruption effect. Eventually, the militant group replaces the slain leader and returns to normal operation. The reduction in number and lethality of attacks is not permanent (Johnston & Sarbahi, 2016, pp. 215-216). This general pattern of temporarily reduced violence holds in the case of the Israeli program (Jaeger & Paserman, 2009, p. 332). Organizations can, in time, recover from individual blows. Thus, constant pressure via sustained targeted killing campaign is essential.

One product of decentralized militant command is an increase in the proportion of indiscriminate attacks against civilians instead of targeted attacks on government or military targets. At first, this seems undesirable. One of the primary responsibilities of counterterror forces is the protection of civilians. However, there is a strong body of literature showing that indiscriminate violence targeting civilians backfires against militants and ultimately diminishes their prospects of victory (Abrahms & Potter, 2015, pp. 314-315). Senior militant leaders are aware of this trend and do their best to control such excesses (Abrahms & Mierau, 2017, p. 832). Senior leaders attempting to enforce restraint can be found across groups, from al-Zawahiri scolding Zarqawi for reveling in his prominence as "Sheikh of the Slaughterers" to PKK leader

Murat Karayilin directing his forces not to target civilians (Abrahms & Potter, 2015, p. 312). However, there is a principal-agent problem as there is a disconnect between militant leadership and the members who actually conduct attacks. Lower-level militants lack the perspective of senior leaders, may not have the capacity to easily strike military targets, and even have other incentives to target civilians (Abrahms & Potter, 2015, p. 316). Militant groups with a weaker, less centralized leadership are less able to restrain their foot soldiers and are 15 percent more likely to target civilians (Abrahms & Potter, 2015, p. 324).

Targeted killings reduce leadership control and increase self-defeating indiscriminate attacks. Successful strikes increase the proportion of violence against civilians by seven percent and the act of attempting a strike alone increases the probability by 6.5 percent (Abrahms & Potter, 2015, p. 328). This indicates that the presence of an active targeted killing campaign forces leaders to take security measures that inhibit their ability to control their organization. It is important to note that this pressure only increases the likelihood of attacks against civilians; it does not reduce attacks on military targets (Abrahms & Potter, 2015, p. 329). Security measures may leave the leader less able to restrain their forces, but still capable of directing attacks on military targets. However, successful strikes both increase the chance of attacks against civilians and decrease that of attacking military targets (Abrahms & Potter, 2015, p. 329). This suggests that killing a militant group's leader degrades the group's striking capability, so they are forced to settle for less difficult targets. Notably, there is brief delay before the reduction in attacks against military targets as plans in place before the attack are carried out (Abrahms & Potter, 2015, p. 330). The disruption to the militant group's operations becomes fully apparent once new directions or planning is required. Further studies have confirmed that militant groups engage in more indiscriminate attacks against civilians in the two weeks after a leader is killed (Abrahms & Mierau, 2017, p. 837). There is evidence that the increase is also not permanent and attacks on civilians return to normal levels eventually (Abrahms & Mierau, 2017, p. 845). As new leaders reassert control, discipline is once again imposed on the lower ranks. This ability to recoup from any individual strike further emphasizes the importance of a sustained targeted killing campaign instead of occasional strikes.

While the consensus on the efficacy of targeted killing has shifted, it is premature to declare the issue concluded. There is still much left unsettled and underspecified, and thus, this article echoes those cited in its call for further research. The direct causal links between strikes, loss of militant leadership, and increased proportion of attacks on civilian targets must be better established. How long the impact of a strike lingers remains unclear. There is no research on whether the effects of successive strikes are cumulative or independent. Nonetheless, while more research is needed, we can draw four valuable policy lessons from what has been done. First, targeted killing is probably not counterproductive. Second, there is utility in killing targets other than the primary leader. The death of mid-level leadership and specialists also disrupts militant operations. Third, sporadic strikes are insufficient since some of the most important impacts are temporary. Thus, a constant campaign is desirable. Fourth, states that engage in targeted killing should be aware of the increased likelihood of civilian deaths and be prepared for them.

There is truth in the maxim that you cannot kill your way to victory in counterinsurgency. However, neither can there be a successful counterinsurgency operation without violence. Targeted killings are a further extension of that theme. A targeted killing campaign degrades militant leadership, inhibits coordination, induces self-defeating acts, and suppresses violence. The value of a sustained targeted killing campaign is the space that it creates for nation-building and the difficult tasks that do defeat militant groups.

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