



The Lithuanian National Defence Volunteer Forces and U.S. Special Operations Forces participate in exercise Saber Junction 2018 at the Joint Multinational Readiness Center in Hohenfels, Germany, on 8 September 2018. The two forces train to conduct irregular warfare in enemy occupied territory. U.S. ARMY PHOTO BY SGT. KAREN SAMPSON

Over time a metaphorical critical mass constructed of global irregular warfare (IW) actors, state and non-state, has developed. The core is now active and exists within an enabling contemporary environmental structure. State warfare hegemony has decreased conventional competition and increased asymmetrical strategies. The result of this has been the emergence of IW as a prominent strategy and a self-propagating chain reaction of IW activity. This activity is releasing increasingly dangerous levels of destabilizing effect. This monograph reviews IW theory and history, and describes the contemporary operational paradigm. It analyzes the effect of cumulative IW activity and discusses prescriptive approaches to the problem. It concludes that, if stability is an objective, then counter-IW must be holistically undertaken with strategies to reduce conventional warfare competition. IW must not be casually used as a convenient outlet for competition below the threshold of war, the potential damage of unlimited IW will be significant and lasting.

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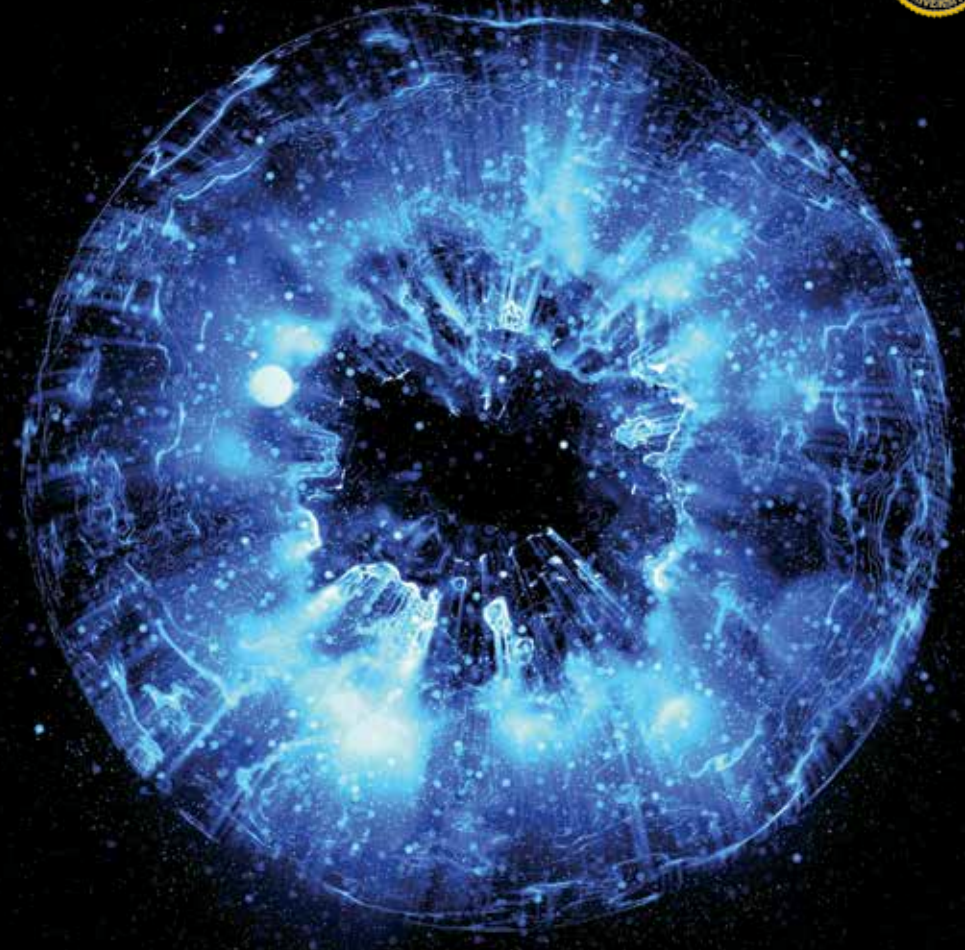


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JSOU Report 19-3 Ticking the Dragon's Tail: The Destabilizing Effects of an IW Critical Mass Marsh



JOINT SPECIAL OPERATIONS UNIVERSITY



Ticking the Dragon's Tail: The Destabilizing Effects of an Irregular Warfare Critical Mass

Ned B. Marsh

JSOU Report 19-3



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*Tickling the Dragon's Tail:
The Destabilizing Effects of an
Irregular Warfare Critical Mass*

Ned B. Marsh

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On the cover. Illustration of a nuclear reaction element. PHOTO BY DMITRIY RYBIN/SHUTTERSTOCK

Back cover. The Lithuanian National Defence Volunteer Forces (KASP) and U.S. Special Operations Forces participate in exercise Saber Junction 2018 at the Joint Multinational Readiness Center in Hohenfels, Germany, on 8 September 2018. The two forces train to conduct irregular warfare in enemy occupied territory to support the U.S. Army's 173rd Airborne Brigade as they execute land operations in a multinational joint environment. U.S. ARMY PHOTO BY SGT. KAREN SAMPSON

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Foreword

The euphemism of “tickling the dragon’s tail”—referring to the practice in nuclear experimentation of “teasing” a plutonium core toward critical mass—is used by Lieutenant Colonel Ned Marsh to explain the idea that the ongoing development of an irregular warfare (IW) critical mass will produce such an uncontrollable chain reaction that the result will be social disruption and instability, adversely affecting peace and security to such a degree that the international order could be irrevocably altered.

A graduate of both the Naval Postgraduate School and the U.S. Army’s School of Advanced Military Studies (SAMS), Marsh offers the reader an interesting take on the problem of IW—a mode of conflict as old as civilization itself. While certainly not the first to offer us a look at the subject of IW, Marsh’s insightful analysis uses the lens of “IW power diffusion” to shed light on what the effects of an IW critical reaction might be. Moreover, he uses the idea of an IW “demon core” as a metaphor to describe the danger associated with the contemporary and prolific use of IW as a tactic and strategy of global state and non-state actors. This core mass of actors exists within an operating environment that Marsh characterizes as “enabling,” and is composed of such structural factors as globalization, complexity, expanding populations, and the information age. This is only compounded, Marsh argues, by state nuclear and conventional warfare hegemony that has increased asymmetry and decreased the ability of actors to compete conventionally. The result, Marsh concludes, is the emergence of IW as a prominent strategy by global actors. Well-written and thoroughly researched, this monograph is an important contribution to the study of IW—particularly at the operational and strategic levels of war, and should be read closely by students and scholars of IW, as well as contemporary strategy.

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Lieutenant Colonel Ned Marsh is a U.S. Army Special Forces officer. He has served extensively in Army and joint special operations units throughout the Pacific, European, and Central Asian areas of operations. In this role he routinely advised and assisted allied and partner nation regular and irregular forces during training and combat operations in support of operational and strategic objectives.

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Introduction

“Tickling the dragon’s tail” is a euphemism attributed to physicist Richard Feynman, referring to the practice in nuclear experimentation of teasing a plutonium core toward critical mass and chain reaction. One such core was nicknamed the Demon Core for its involvement in accidents that killed the scientists who were experimenting with it.¹ In this monograph, the Demon Core is presented as a metaphor for the idea that the ongoing development of an irregular warfare (IW) critical mass will produce such an uncontrollable chain reaction of disruption and instability that peace and security will be adversely affected to such a degree that the international order and global status quo could be irrevocably changed. IW is defined as “a violent struggle among state and non-state actors for legitimacy and influence over the relevant population(s).” The purpose of this monograph is to research questions related to IW power diffusion, and what the effects of an IW critical reaction might be.

The Demon Core was a subcritical mass of nuclear fissile material used by the United States to develop nuclear weapons during the Manhattan Project. Nuclear scientists used the uranium core to understand when and how a subcritical mass would reach criticality. The scientists would impact the core by adjusting the structural and environmental variables around the core, including fuel, shape, density, and temperature. In addition, nuclear scientists would learn to control the reactions by introducing neutron-absorbent control rods. The most important variable in the experiments was the development and use of neutron reflectors. The reflective material would bounce neutrons back at the core, rapidly increasing criticality. On two occasions, scientists accidentally added enough reflective material that a supercritical fission chain reaction was produced. In both cases, the scientists were able to remove the reflective material, stopping the chain reaction.

Unfortunately, in the process of removing the reflectors, the scientists were irradiated with significant amounts of gamma radiation, which resulted in their slow and agonizing deaths. The gamma particles penetrated the cells of the scientists, producing an ionizing effect which destroyed cell structure and cellular function.² The cumulative cellular disruption caused by the

radiation affected their biological system so significantly that their bodies could not survive.

Often, the scientists did these experiments—tickling the dragon’s tail— as a show for their colleagues, demonstrating their ability to control the reaction. On one occasion, a scientist using a screwdriver as a lever to control the top cap of a spherical reflector dropped the screwdriver. The cap fell, completing the sphere and causing the core to go super critical.³ The scientists had become so complacent about the risks they took, and in their ability to control the reaction, that they were surprised when they lost control, and were killed as a result.⁴



Figure 1. Public historian Richard G. Hewlett re-creates Slotin’s 1962 experiment. DEPARTMENT OF ENERGY/RICHARD G. HEWLETT/ PUBLIC DOMAIN

This concept of tickling the dragon’s tail, taken from research on nuclear reactions, was chosen as a metaphor for IW because the overconfident scientists understood the danger of their experiments, yet routinely teased the core toward critical mass. The theory presented in this monograph is predicated on the idea that a Demon Core IW mass exists. This mass is made up of all actors who have an agency in IW, including state and non-state actors.

These actors can be, but are not limited to, criminal organizations, special operations units, paramilitary units, terrorist organizations, and cyber or information organizations. This core mass of actors has developed over a long stretch of history as the environment has become increasingly hospitable to their activities. To continue the metaphor, each trained IW actor can be likened to a dangerous fissile Uranium 235 molecule. These organized, motivated, trained, and equipped actors are the enriched elements, capable of violence, that comprise the IW core.

This subcritical mass of IW actors is enabled by environmental structural factors that are hospitable to IW.

- a. Basic structural factors include a significant increase in the global population. With increased population comes increased competition and cooperation for global resources. The resultant effect of the global economy is a more complex and interdependent social and economic system.⁵
- b. The next environmental structural factor is the manner with which the global connectivity of the information age has enabled the progress of the global population toward achieving greater freedom and self-determination.⁶ What this means is that there is now a larger global population of people, who, if aggrieved, can more effectively communicate and organize.
- c. A third significant factor is the rise of non-state actors' capacity and capability as globalization re-orders the international system.⁷ In sum, there is an exponentially growing population of aggrieved people, with a desire to change their condition, and who have the ability to communicate, organize, and conduct IW.
- d. A final environmental structural factor is the rise of state conventional and nuclear warfare hegemony, which has decreased the ability for states to compete through conventional war. The result of this factor has been the rise of the asymmetric strategies of geopolitical actors, which often includes the significant use of IW.⁸

In addition to these structural factors are additive IW reflective lenses, which this paper argues are bringing the subcritical IW core toward critical

mass. These reflective lenses include IW promotion, proliferation, and promulgation.

- a. Promotion is the extensive use of IW by many actors, state and non-state, which has normalized IW as acceptable and necessary.
- b. Proliferation is the creation, growth, or propagation of more IW actors by other IW actors. Promotion and proliferation have created promulgation.
- c. Promulgation is communicating, advertising, or making IW widely known. Promulgation has created a plunging effect, where as an actor demonstrates its capabilities, and its adversaries mimic and develop their own similar capabilities, plunging the entire system forward to a higher level of development.⁹

Returning to the metaphor, the increased development of state and non-state IW capacity and capability has had a significant neutron reflector-like effect on the subcritical mass of IW actors. The resultant effect has been a self-propagating chain reaction of IW activity.

A significant aspect to the development of an IW critical mass is a control problem related to the chain reaction. The control problem is metaphorically similar to dropping the screwdriver and allowing the nuclear reaction to run away uncontrollably. The proliferation of state IW has diffused IW capacity and capability over to an increasingly larger percentage of the global population. Conversely, the ability to wage nuclear war is held by a relatively small percentage of the global population, such that this exclusive community can escalate and de-escalate as they see fit, thus avoiding the exorbitant costs and risk from nuclear mutually assured destruction.¹⁰

However, the power to make irregular war has now diffused to such a large portion of the global population, including non-state actors, that no single or group of hegemony has sufficient ability to de-escalate IW conflicts. For example, despite an almost two-decade-long Global War on Terror (GWOT) and significant operational military success by the U.S. military, the threat from Islamist Violent Extremist Organizations (IVEO) has continued to grow. In addition to the use of IW by non-state actors, states themselves are also using aggrieved populations to fight proxy wars in strategies against each other, as seen in recent actions by Russia in Europe. This state IW has

a further, metaphorical 3P; proliferation, promulgation, and promotion-reflective effect on the IW critical mass.

This monograph argues that the ultimate effect of this IW critical mass will be similar to the effect that gamma radiation had on the scientists' bodies. The IW critical mass will produce so much friction in the complex geopolitical system that the system will lose the ability to stabilize or achieve homeostasis.¹¹ Without homeostasis, or time periods of relative international peace and stability, the system will never settle long enough for significant structured positive progress to occur; this condition could result in global destabilization or conflict, a state of entropy.¹² The cumulative effect of sustained global IW will have such a disruptive and destabilizing effect on global peace and security that the normative international system and global status quo could be threatened. It is possible that the resultant destruction from IW reaching critical mass could be as devastating as nuclear war. This destruction may take longer to manifest, may be more difficult to recognize, and, if it occurs, could be exponentially more difficult to stop.

It is possible that the resultant destruction from IW reaching critical mass could be as devastating as nuclear war.

To better understand the current phenomenon of IW, this monograph first examines the historical and theoretical development of global IW phenomenon. Next, it reviews the current environmental structure that enables IW, and the paradigm of contemporary IW actors operating within the environment. The subsequent section looks at the IW reflective lenses, which are pushing IW into a critical state, and the negative effect this reaction will have on the environment. The final section reviews prescriptive approaches that might decrease the danger from an IW critical mass.

Chapter 1. Development of an IW Core Mass

In order to understand the critical mass, the reflective lenses, and the effect of the reaction, it is first necessary to describe the subcritical core of IW actors. The following section will describe the historical development of IW, incorporating relevant theories and doctrine. It will show the progression of IW as a phenomenon from an unstructured social tool into a highly integrated military strategy of state and non-state actors. The section will continue with a description of the contemporary paradigm of state and non-state IW, and will finish with a description of the environmental factors, including conventional hegemony, globalization, population, and information, which have contributed to the problem. This section makes the argument that a subcritical mass of IW actors not only exists, but is active globally.

IW Theory

Before proceeding, it is necessary to address a continuing and fundamental issue present in the study of IW. This is the lack of a common second grammar pertaining to what IW is and how practitioners and scholars communicate this through language and doctrine.¹³ U.S. doctrine—specifically Joint Publication (JP) 1, the capstone doctrine for the Armed Forces of the United States—defines IW as “a violent struggle among state and non-state actors for legitimacy and influence over the relevant population.”¹⁴ The U.S. Army Special Operations Command also uses this definition. Despite correctly categorizing some aspects of IW, JP 1 does not adequately define the full scope of IW. The current definition is far too limiting and does not serve as a sufficient umbrella term for warfare that is nonnormative or not conventional. JP 1 is honest in noting its own difficulties.

It is recognized that the symmetry between the naming conventions of traditional and irregular warfare is not ideal. Several symmetrical pair sets—regular/irregular, traditional/nontraditional (or untraditional), and conventional/unconventional—were considered and discarded. Generating friction in the first two instances was the

fact that most U.S. operations since the 11 September 2001 terrorist attacks have been irregular; this caused the problem of calling irregular or nontraditional what we do routinely. In the last instance, conventional/unconventional had previous connotation and wide usage that could not be practically overcome.¹⁵

The opening chapter of JP 1, *Theory and Foundations*, makes it clear that the U.S. military has interpreted its own history from 1775 through the theoretical lenses of Clausewitz and Jomini. These lenses have elevated what the U.S. doctrine describes as, traditional war to a position of dominance--the idea that hierarchical organizations can control the application of limited violence for political and operational objectives. Categorized warfare, while illuminating in some respects, can be simultaneously limiting.

For example, the words traditional, conventional, orthodox, and regular are all synonyms, meaning conforming to or governed by established and accepted standard of procedure or convention. Conversely, the words irregular, unconventional, unorthodox, and untraditional are all synonyms to each other and antonyms to the first set of words. Meaning that more generally, IW is any form of warfare which does not conform to established and accepted standard of procedure or convention.

Further exacerbating the problem is that U.S. military doctrine also uses common language in proprietary like definitions, as a means to categorize specific tasks and specific types of operations. So, for example, unconventional warfare (UW) is not a synonym of IW, instead it is defined as “activities conducted to enable a resistance movement or insurgency to coerce, disrupt, or overthrow a government or occupying power by operating through or with an underground, auxiliary, and guerrilla force in a denied area.”¹⁶ Special warfare is “the execution of activities that involve a combination of lethal and nonlethal actions taken by a specially trained and educated force that has a deep understanding of cultures and foreign language, proficiency in small-unit tactics, and the ability to build and fight alongside indigenous combat formations in a permissive, uncertain, or hostile environment. Special warfare is an umbrella term that represents Special Operations Forces (SOF) conducting combinations of unconventional warfare, foreign internal defense, and/or counterinsurgency through and with indigenous forces or personnel in politically sensitive and/or hostile environments.”¹⁷ Political warfare is the “systematic process of influencing the will and so directing the

actions of peoples in enemy and enemy-occupied territories.”¹⁸ Not codified specifically in doctrine hybrid warfare is described most simply as unique combinations of all forms and methods of war, regular, and irregular.¹⁹

Separating regular and IW is not a requirement, as both are inherent in all war. What is required is understanding the different effects that regular or irregular operations produce, or more importantly, understanding what is avoided by using irregular means in place of regular warfare. Then, conceiving of a strategy that uses and accounts for yours and your adversaries’ use of regular and irregular war.

It must be noted that words and definitions matter, and that there are real and relevant reasons why the U.S. military classifies and defines operations in the manner in which they do. The complex bureaucratic process drives a real need to define who does what and for what purpose. This is so that Congress, the Department of Defense, and the Services can make decisions on budgets, resourcing, manning, equipping, and training. For the U.S. military this process has always been much easier for regular warfare, than for IW.²⁰

By the very nature of the definition, it is easier to control and regulate regular, conventional, or traditional things. Think food, drink, and medicine regulated by the U.S. Food and Drug Administration. The more irregular, unconventional, or nontraditional an item, the more difficult it is to categorize and approve. The very nature of IW makes it difficult to understand and define. And, when IW definitions are applied by the U.S. military, they are often limiting in purpose or practice.

Throughout these methods, forms, and definitions there is significant overlap and confusion. These are not scientific terms, but situationally dependent descriptive terms which must contend with being used in a complex, dynamic, and adaptive environment which inherently creates difficulties. For this study, the term IW will be used more broadly and generally than the restrictive JP 1 definition, as an umbrella term which encompasses any form of warfare outside of conventional or nuclear war. This includes those already defined and others including: hybrid, unconventional, special, political, resistance, counter-resistance, counterinsurgency, foreign internal defense, etc. What is consistent throughout the multitude of forms, types, names, and definitions is the underlying nature of the warfare.

Prominent military theorist Carl von Clausewitz’s widely-accepted thesis is that war is an act of force to compel the enemy.²¹ This can be done by disarming or destroying the enemy, occupying land, breaking their will,

or increasing their suffering to a point that they can no longer resist.²² In U.S. military doctrine, this idea is defined as the two fundamental strate-

For this study, the term IW will be used more broadly and generally than the restrictive JP 1 definition, as an umbrella term which encompasses any form of warfare outside of conventional or nuclear war.

gies by which war can be won: annihilation/attrition and erosion.²³ Strategies of annihilation/attrition are primarily used when the sides in a conflict are roughly equally powerful. When an asymmetry exists between combatants, then disarming or destroying a more powerful enemy through direct confrontation—annihilation/attrition—is

not a viable strategy, and instead, erosion is likely to be the preferred strategy.

The erosion strategy focuses on destroying a more powerful adversary's will or ability to fight, rather than on defeating the adversary's forces directly. For the indirect method, the goal is to avoid direct conventional action and instead change the conditions of the conflict.²⁴ Less-powerful forces need to combat their adversaries but avoid direct large-scale military confrontations—erosion strategies typically employ IW. Clausewitz recognized that war is “a continuation of political intercourse, carried on with other means.”²⁵ He also understood and communicated that “in war many roads lead to success, and that they do not all involve the opponent's outright defeat.”²⁶ One of these roads was a strategy of erosion, or as Clausewitz described it, to “wear down the enemy,” which he defined as “using the duration of the war to bring about a gradual exhaustion of his physical and moral resistance.”²⁷ The strategy of erosion is one that became a consistently utilized strategy of IW theorists such as former Chairman of the People's Republic of China Mao Tse-tung and British Colonel T.E. Lawrence, and has been codified into U.S. military doctrine.²⁸ The strategy of erosion can be seen in multiple IW campaigns throughout history.

IW History

Pre-Cold War Era

From ancient times through the premodern period and up until the 20th century, IW was conducted primarily by non-state actors who organized mostly for social change.²⁹ The relatively rare state-sponsored IW was limited in scope and scale.³⁰ Clausewitz describes irregular war in his time as a

people's war of popular uprising used as a means for revolutionary political change.³¹ He noted that militias and armed civilians should not directly confront enemy main forces, but should nibble around the edges in a nebulous and elusive manner. Clausewitz believed that massing of any kind in concrete form would ensure that the enemy would crush the insurgent force.³²

The American Revolution presents an example of what Clausewitz prescribed. From January through March 1777, Washington conducted *petite guerre* (small war) in what is now known as the Forage War.³³ Though Washington was not enamored with non-regular forces, he did recognize the opportunity to harass and erode the British force. Washington dispersed some of his regulars to work with the militia, who attacked when able, killed British regulars, and disappeared back into the countryside. For three months the irregular force skirmished, ambushed, and swarmed the British, inflicting a significant impact on the material strength of the British force.³⁴ The Forage War played a significant contribution during a difficult period of the revolution, and ultimately set conditions for American victory. American founders learned valuable lessons from the war. These included recognizing the internal risks from irregular and revolutionary warfare, as they had conducted it themselves against their own formerly sovereign state. In response, they created constraints that limited the actions of the new American armed forces, in order to decrease the risk of a standing army turning against the republic. Over time this focus on law and oversight has evolved into a robust code of law with intricate detail constraining military and paramilitary action by the United States.³⁵

The United States was certainly not the only actor to have an appreciation for the utility of IW. Another important historical example that occurred during Clausewitz's lifetime was the French experience against guerrilla warfare on the Spanish Peninsula from 1807-1814.³⁶ In 1807, Napoleon, in an attempt to stabilize the political situation on the Iberian Peninsula, took control over the corrupt Spanish government. Despite some conventional successes during his personal campaigns of 1808-1809 against Spanish regular formations, Napoleon considered the overall situation in Spain as an ulcer in the larger body of his wars. His forces were continually worn down by a popular Spanish insurrection. Napoleon's power was eroded by the Spanish second front. The ruthless war waged by the Spanish guerrillas established a precedent that grand armies, such as Napoleon's, could be challenged in

indirect and irregular ways, and that such irregular challenges could meet with success.³⁷

Following Napoleon, the century between 1840 and 1940 was critical for laying the foundation for the development of a subcritical mass of irregular actors, and building the initial structural factors that would later influence the mass toward criticality. IW during this period was dominated by the theory and action of communist leaders, specifically Karl Marx, Vladimir Ilyich Lenin, and Mao. Marx's argument for the use of violence during the socialist revolution was that, as economic changes forced social and political changes, the ruling elite would feel threatened and would resist the change, and this in turn would require the resistance to use violence.³⁸ Lenin similarly concluded that only violence would bring true change.³⁹ Mao refined the ideas of Marxism and Leninism into a coherent theory of politics and military action. Perhaps most importantly, Mao laid down a clear plan for the strategy and tactics of guerrilla warfare, which was to harness the power of rural peasant society to take control away from the dominant, powerful elites. Mao also voiced the idea of permanent revolution, that the continuous turmoil and social disruption from conflict would yield inevitable great progress.⁴⁰ Guerrilla warfare was Mao's tool for perpetually extending the revolutionary conflict over time.⁴¹

Mao's IW model was divided into three phases: organization, guerrilla fighting, and war of movement. Because the guerrilla derives from and is supported by the population, it was critical for Mao to establish political goals and objectives that coincided with the aspirations and sympathy of the population.⁴² Mao intended guerrilla units to attack with clandestine, covert, and overt small unit tactics, with the goal of surviving while destroying the enemy.⁴³ For Mao, political operations were as important as military operations. Political operations included sabotage, subversion, and assassination to trap the status quo government in a quagmire of hostile population and coercive change.⁴⁴ As Chalmers Johnson describes it, the goal is to "weaken the enemy through a protracted war of attrition."⁴⁵ Once a guerrilla war has reached the second or third phases of active combat, it is extremely difficult to defeat. Defeat becomes more difficult at later stages because the mass and momentum of the movement are proportionally larger.⁴⁶

The communist leaders did not just develop a political theory, but also developed a doctrine for action, which was then used in a series of revolutionary conflicts across the totality of the Asian continent. These actions included

the Soviet revolutionary beginnings, which started with the October Revolution in 1917 and lasted through 1923.⁴⁷ In China, the 1927 Autumn Harvest Uprising began a series of revolutionary activities that would include the Long March in 1934, and culminated with the Chinese Communist Revolution, the solidification of Mao, and the founding of the Communist Peoples' Republic of China in 1949.⁴⁸ Over this same time period, Western European militaries would begin to flirt with IW as an aspect of their overall strategy. This can be seen in the World War I experiences of Lawrence in Arabia and German General Paul von Lettow-Vorbeck in German East Africa.

The Arab Revolt of 1916-1918 against the Ottoman Turks was an important event in early 20th century IW. Lawrence, a British advisor to the Arabian tribesmen, described their effort not as an army with banners attacking a massed Turkish force, but as "an influence, an idea, a thing intangible, invulnerable, without front or back, drifting about like a gas."⁴⁹ Lawrence understood that the irregular force had an advantage in its ability to move, hide, and attack only when conditions were beneficial to their objective. They attacked Turkish *matériel*, understanding that the Turks valued it more than they valued the lives of their soldiers. Lawrence's own force valued life over replaceable *matériels*, so only engaged under the right conditions. Lawrence's IW thinking and writing spanned tactics, operations, and strategy. In his book describing this conflict, *The Seven Pillars of Wisdom*, Lawrence describes how he cognitively linked the Arab's tactical actions to strategic objectives. "Final victory seemed certain, if the war lasted long enough for us to work it out."⁵⁰

Lawrence's comments exhibit the same operational mindset that Mao described as perpetual conflict. The overarching idea for both was that a protracted war would allow the asymmetric adversary sufficient time to erode a stronger adversary's combat power and will. The example of Lawrence and his successful Arab Revolt, like that of Mao, proved that, when properly applied, an irregular force could use its asymmetric advantages and gain decisive results against a conventional adversary.⁵¹ The lessons learned from that campaign have had a lasting impact on how IW is understood.

While Lawrence's efforts were a small factor in World War I, as an element of state strategy IW began to truly emerge during another great conflict of the 20th century, World War II. The Western Allies viewed the war as such an existential threat that few limitations or constraints were placed on forces if the actions were in pursuit of victory. This lack of constraints meant that

The Western Allies viewed the war as such an existential threat that few limitations or constraints were placed on forces if the actions were in pursuit of victory.

IW became a key part of the war strategy. U.S. political and military leaders developed the Office of Strategic Services (OSS) and the Jedburgh project.⁵² In the European theater, the Jedburgh teams were inserted deep into Nazi occupied territory to organize, arm, train, and employ guerrillas to conduct clandestine and covert

IW. The sabotage, subversion, and guerrilla activities were intended to shape the environment and complement conventional Allied operations.⁵³ Similarly, in Asia, during the four years that Japanese forces occupied the Philippines, Filipino-American guerrilla units fought extensively. These units had an overwhelming lack of supplies yet were able to conduct operations and be a serious presence on the battlefield, shaping conditions for liberation. The guerrillas executed a successful indirect strategy of erosion through ambush, raiding, sabotage, and subversion.⁵⁴

Cold War Era

Following World War II, the rise and existential threat to the United States from the Soviet Union and global nuclear war, precipitated a rise in American covert irregular action. While the OSS was disbanded in 1945, the traditions survived and were ultimately institutionalized in the Central Intelligence Agency (CIA) Office of Policy Coordination.⁵⁵ Covert and clandestine influence activities were used extensively by every American president from President Harry S. Truman in 1948 through President Ronald Reagan in 1989 to systematically weaken Soviet power and influence.⁵⁶ These operations conducted around the world included all manner of IW including, but not limited to, paramilitary, propaganda, political influence, assassinations, coups, guerrilla sponsorship, subversion, and sabotage. Of the 49 declassified covert actions conducted in this time period, the vast majority were in support of the Cold War.⁵⁷

Throughout the Cold War, the Soviet Union also conducted extensive IW.⁵⁸ Two of the common methods of Soviet IW were active measures and special tasks. Active measures were actions designed to influence world events, while special tasks were designed to deliver violence in order to achieve an objective.⁵⁹ Soviet political warfare undertook active measures that were often targeted against Western governments in order to create

division. The Soviet Security and Intelligence Service (KGB) (in Russian is *Komitet Gosudarstvennoy Bezopasnosti*) actively sowed conspiracy theories related to the assassination of U.S. President John F. Kennedy and sought to exploit racial divisions in the United States by targeting both black and white communities.⁶⁰ Soviet special tasks included assassination, subversion, and sabotage. Soviet assassinations largely were targeted against current and former communist actors either inside or outside of the Soviet Union. Josip Tito and other communist personalities who had gone against the Central Committee of the Communist Party of the Soviet Union, including those inside Hungary, Bulgaria, and East/West Berlin, were targeted throughout the Cold War as enemies of the U.S.S.R.⁶¹ Sabotage operations were planned and conducted extensively throughout Asia and Europe by both the KGB and the military intelligence service of the Russian Federation (GRU) (in Russian is *Glavnoye Razvedyvatelnoye Upravleniye*).⁶²

A well-documented example of Soviet IW was *Spetsnaz* (translated means special designation forces) operations conducted during the Cold War in Afghanistan. On 27 December 1979, 700 KGB *Spetsnaz* soldiers from Alpha and Zenith units invaded the Afghan palace, assaulted, and assassinated the Afghan President Hafizullah Amin while disguised as Afghan soldiers.⁶³ This was the opening operation to a war that would last until 1989, and one that would see extensive use of Soviet *Spetsnaz* in low- and high-intensity combat operations against both Afghan uniformed forces and mujahideen.⁶⁴

In addition to using their own irregularly-focused military forces throughout the Cold War, both the Soviet Union and the United States operated extensively with proxy forces. As an example, the Soviets backed the Irish Republican Army against the British, and, against the United States, backed the Sandinistas in Nicaragua, Palestinian terrorists in Lebanon, and the North Vietnamese Army and the Viet Cong guerrilla forces in Vietnam.⁶⁵ Likewise, the United States sponsored mujahideen guerrilla forces against the Soviets in Afghanistan.⁶⁶ The United States also sponsored anti-communist forces in Nicaragua in what led to the Iran-Contra Affair, as well as in the Philippines, Asia, and South America throughout the Cold War.⁶⁷

The war in Vietnam was a key historical period in the rise of U.S. IW. The complex operational environment proved immensely difficult for military and civilian leaders. As the war grew to be an increasing problem, U.S. military leaders worked to develop comprehensive strategies within significant political constraints. These strategies included extensive use of IW in order

to complement conventional operations that were proving to be unsuccessful in resolving the underlying issues of the war.⁶⁸ Irregular efforts included Civilian Irregular Defense Groups, Civic Action Programs, Special Operations, and other advisory efforts. From 1964 through 1972 the Military Assistance Command Vietnam–Studies and Observations Group (MACV-SOG) executed the war’s most covert operations in Laos, Cambodia, and South and North Vietnam. These operations—intended to confuse, disrupt, deceive, attrite, and destroy—included indigenous saboteurs, penetrations, sabotage, subversion, propaganda, raids, snatches, reconnaissance, and ambushes.⁶⁹ IW during the Vietnam War was not the sole province of MACV-SOG. From 1967 through 1973, the PHOENIX Program, led and coordinated by the CIA and staffed by United States and Republic of Vietnam soldiers, conducted extensive political warfare. The political warfare of PHOENIX was a concerted effort to neutralize (kill, capture, or entice defection) the Vietcong’s leadership.⁷⁰ The United States used armed propaganda and political teams, mimicking the actions of the Communist Viet Minh, while the Viet Minh themselves drew the inspiration of their actions from Maoist thought.

The Viet Minh demonstrated the importance of political activities in guerrilla warfare, focusing on the objective that establishing political control over the rural population was a paramount precondition to destroying the status quo government. The Viet Minh’s primary battle was not fought to attrite the opposition, but to win control of villages and population.⁷¹ Party cells would target villages, penetrate, and organize. The Viet Minh would also conduct party terror called Destruction of the Oppression. If a village transitioned to control willingly then terror was not used, however, in contested areas, assassination, kidnapping, and execution were used to terrorize villages into supporting the Viet Minh. The villagers, knowing who was in control locally, would not support the South Vietnamese government, as this would bring reprisals against their families. Expansion of control included organization, redistribution, taxation, recruitment, and education—all for the purpose of supporting the party and the revolution.⁷²

This terrible and brutal war raged at the local level, tearing hamlets and districts apart.⁷³ For the victorious North Vietnamese forces, IW and erosion proved to be a successful strategy. For the United States, the Vietnam War represented defeat, however, the powerful lesson that an irregular asymmetric force could defeat more powerful conventional forces was not lost on the United States.⁷⁴ Following the Vietnam War, the United States doubled

down on its conventional might and holistically incorporated large aspects of IW into its own doctrine and force structure.⁷⁵

Post-Cold War Era

The end of the Cold War came in 1991 with the dissolution of the Soviet Union. That same year, military theorist Martin Van Creveld presented the idea that “the most powerful armed forces are largely irrelevant to modern war.”⁷⁶ Van Creveld argued that the primary reason for this irrelevance is because the maintenance, logistics, administration, and cost of modern armed forces and their required technology ensures that the cost of using them is considered unacceptable.⁷⁷ Another important factor is the proliferation of nuclear weapons. The catastrophic nature of these weapons is such that states cannot use them against each other, for fear of mutual assured destruction or state suicide. Using nuclear weapons in an offensive role would carry such significant fallout, both real and perceptually, that the cost is seen as too great. Damage to reputation, population, economic systems, and environment would invariably produce intense international condemnation, thus ensuring that a nuclear first strike is not a good option.⁷⁸

Using nuclear weapons in an offensive role would carry such significant fallout, both real and perceptually, that the cost is seen as too great.

Because of these factors, Van Creveld predicted the rise to dominance of low-intensity conflict, noting that, “If states are decreasingly able to fight each other, then the concept of intermingling already points to the rise of low-intensity conflict as an alternative.”⁷⁹ With the United States effectively cornering the market on conventional warfare through budgetary spending and nuclear proliferation, its adversaries have been forced to either accept the current condition of American global hegemony or seek an alternative means of challenging the U.S. dominance through asymmetric indirect and irregular ways and means. In support of Van Creveld’s argument, the post-Cold War period has seen the rise of non-state actors, perhaps most predominantly IVEOs.

In the 21st century, the conflict which came to be known as the GWOT has been the true coming of age for America’s proliferation of global IW. The 9/11 terrorist attacks had a staggering social and economic impact on America. The following day, U.S. President George W. Bush sought retaliation options to be implemented immediately. The plan, ultimately accepted and

implemented, was the CIA's use of paramilitary units, covertly infiltrated, partnered with U.S. Army Special Forces and indigenous Afghan forces, and directed against the Taliban and al-Qaeda. The crisis had increased the national command authorities' tolerance for risk and decreased their constraints on the use of IW.⁸⁰ IW—executed by American SOF, the CIA, and interagency partners—would increasingly become a predominant aspect of strategy as the war in Afghanistan progressed and expanded to Iraq, the Philippines, Africa, the Arabian Peninsula, and elsewhere.⁸¹

As U.S. President Barack Obama entered office in 2009, he espoused the idealism of trying to avoid violence and war at all costs. In his Nobel Peace Prize acceptance speech, he stated “that no matter how justified, war promises human tragedy,” yet, he continued, “that force may sometimes be necessary.”⁸² President Obama's pragmatism played out over eight years as he conducted extensive covert and overt IW operations.⁸³ While he may have preferred peace, the reality was that the global threat from state and non-state actors required an extensive offensive strategy. The Obama administration attempted to avoid the real and political costs of large-scale military action and preferred the covert and clandestine nature of IW.⁸⁴

The brief history presented above has been laid out to demonstrate that there has been a centuries-long continuation and steadily increasing proliferation of IW. IW has evolved from being not just a social tool for change but to also being a prolifically-used tool of state strategy. A significant amount of global IW actors, forming a subcritical mass, now appears to exist. These actors and their current IW paradigm will be described in the next section.

Contemporary IW

In the second decade of the 21st century, the contemporary operational environment now seems to be a structure capable of driving the subcritical IW mass toward criticality. Currently, significant promotion and proliferation of IW by state and non-state actors is occurring globally. This section will look at the operational paradigms of the United States, Russia, China, Iran, and IVEOs. These are all significant actors who view IW as a prominent and valid strategy. The purpose of the section will be to demonstrate how dense the current IW actor mass is and how the threat of criticality will increase as reflective lenses are added.

The United States

The U.S. military's paradigm of IW continues to fundamentally revolve around its SOF, which it considers to be a critical capability in the conflict against asymmetric adversaries.⁸⁵ The U.S. Army Special Operations Command (USASOC) is categorized, conduct Special Warfare and Surgical Strikes under Title 10 authorities of U.S. Code. The United States' most irregular activities occur as highly classified covert and clandestine action taken under Title 50 authorities of U.S. Code.⁸⁶

The trend of American IW shows no signs of decreasing under U.S. President Donald Trump. Throughout 2017, the preponderance of American combat casualties have been sustained by SOF conducting irregular operations in places like Afghanistan, Africa, Yemen, and Syria.⁸⁷ In an October 2017 speech, CIA Director Mike Pompeo stated "we've now laid out a strategy for how we're going to execute our mission with incredible vigor. We're going to become a much more vicious agency in ensuring that we are delivering this work. We are going to go to the hardest places with some of the hardest people ... to crush it."⁸⁸

The current American IW paradigm exists in homeostasis with the U.S. government and the American people, who seemingly have no major issue with U.S. IW activity; this is evidenced by the fact that the U.S. Congress has not seen a political need to put forward a new Authorized Use of Military Force (AUMF). As of the time of this writing, despite the significant change of conditions, administrations, and enemies, the U.S. military continues the robust and persistent utilization of U.S. SOF operating globally under the AUMF approved soon after 9/11.⁸⁹ Certainly the national command authority of the current and the two preceding administrations were and are comfortable operating extensively within the current AUMF, the existing U.S. Code, and within established methods of congressional oversight.

Key aspects of current American IW are operations conducted outside of declared hostilities. Colloquially, these are called phase zero or gray zone, and these operations are often considered pre-crisis activities, occurring when relations are peaceful or routine. Engagements in phase zero are generally intended to prevent war.⁹⁰ The gray zone is characterized as competition with the instruments of national power short of conventional war.⁹¹

These activities are generally described by practitioners and writers in two competing narratives. The phase zero narrative is one of routine military

engagements with nuanced application where diplomacy is recognized as the lead activity. These activities are intended to support the strategy of the regional commander and the U.S. country team.⁹² The activities shape the environment to prevent and deter conflict. They are conducted as Theater Security Cooperation events under the commander's Theater Campaign Plan intended to build a global network, increase partner capacity and capability, and counter threats.⁹³

Within the gray zone, the narrative for operations is political warfare. U.S. military leaders note that competition is not a binary choice between war and peace, but that in the gray zone the United States must overmatch

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its adversaries with its own hybrid warfare effort. A 2015 USASOC study on SOF support to political warfare states that "The time has come for Political Warfare to recapture a predominant position in the U.S. national security policy and execution."⁹⁴ Military leaders see their role as the executors of the selective use of force or violence in discrete and controlled increments to support coercive diplomacy.⁹⁵ For these leaders, a gray zone win is "the U.S. Government's positional advantage, namely the ability to influence partners, populations, and threats toward achievement of our regional

and strategic objectives."⁹⁶ However, while the United States is currently emphasizing the role of IW, it is not the only player currently pursuing IW strategies.

U.S. State Adversaries

State-sponsored IW conducted by adversaries of the United States has also increased in the contemporary operational environment. Russia, Iran, and China regularly use IW to deal with issues on their periphery, in their regions, and globally within their operational reach.⁹⁷ Their paradigm includes sponsoring proxy forces, deploying SOF, and using information operations.

From 2014, the Russian Federation has conducted extensive IW operations in the Crimea, Ukraine, the Baltics, and during European and American elections and referendums.⁹⁸ These activities are in keeping with their published strategies and doctrine, and with the theory of an IW critical

mass. The activities also are in keeping with the Russian historical use of IW executed throughout the Cold War.⁹⁹

The current Russian hybrid warfare theory was published by Valery Gerasimov in 2013.¹⁰⁰ Gerasimov's vision of the current operational environment includes a "blurring of the lines between states of war and peace."¹⁰¹ Nonmilitary ways and means of achieving political objectives have risen in dominance, while the strategic deployment of hierarchical large conventional units is no longer the primary means of achieving objectives. Instead, the nonmilitary instruments of Russian national power will be used in conjunction with irregular and traditional military means in a hybrid strategy. This includes initiating military operations in peacetime, controlling a unified information space, asymmetric and indirect military prominence, and the inclusion of conventional means under deceptive circumstances during culminating phases. Gerasimov advocates for a strategy that will outstrip, exhaust, and attrit enemies while changing the structure of conflict to allow for Russian global leadership; this is another example of an erosion strategy.¹⁰²

Beyond Gerasimov's structured hybrid warfare model, there are a number of identified principles which are fundamental to the execution of a Russian IW campaign.¹⁰³ These principles include the use of asymmetric and nonlinear actions and the start of military activity without a declaration of war. The elevation of diplomatic, economic, and information instruments of national power over the military instrument also allows for a more covert crisis development and escalation. These actions sow seeds of doubt that are then used to deceive populations and cover Russia's true intentions. The extensive use of the information domain, and the use of cyberwarfare, propaganda, and deception directed against audiences both domestically, internationally, and inside the conflict sphere ensures that the cover story, deception, and narrative are delivered in requisite amounts.¹⁰⁴

To execute their IW, Russia uses an extensive network of local and imported agents. These agents are purposefully intended by Russia to be hard to identify by other actors as Russian agents. They use armed civilian proxies instead of or in advance of their regular troops, and also use a vast array of *Spetsnaz*.¹⁰⁵ These agents use intimidation, bribery, assassination, and agitation to develop the crisis, coerce actors, and influence the environment. Finally, Russia combines a persistent denial of operations with the use of a deceptive political narrative and strategy—one which gives the appearance

of cooperation with global norms while continuing covert and clandestine irregular action. Russia's goal is to create a grey zone where stated intentions do not match intervention actions. Overall, this makes it extremely difficult for Russia's adversaries to confirm actions, prove that Russia is breaking international law, or hold Russia accountable for its actions.¹⁰⁶

Similar to Russia, Iran is also a highly-active regional IW actor that regularly uses asymmetric ways and means to achieve political objectives below the threshold of large-scale conflict. The U.S. government describes a major aspect of Iranian IW as "covert support to proxy forces in the region and beyond."¹⁰⁷ These proxy forces often are Shia-based IVEOs that include Hamas, Lebanese Hezbollah, Palestinian Islamic Jihad, the Taliban, and Iraqi Shia groups.¹⁰⁸ The primary method of support to proxy forces is through the Islamic Revolutionary Guards Corps (IRGC), which provide, material support, training, organization, and leadership to organizations that have goals that are broadly aligned with Iranian interests.¹⁰⁹ Iran's malign activities have created significant instability in the Middle East region. Their activities are represented domestically as being in the interests of Iran. By working against Western powers' regional influence, Israel's long-term survival, and Sunni-based governments, Iran ensures that their Shia-based regional hegemony continues to be a long-term possibility.¹¹⁰

In contrast to Russia and Iran, China appears to operate farther away from the guerrilla military end of the IW spectrum and more toward the diplomatic, information, and economic end. The Chinese Central Military Commission's non-doctrinal concept of "unrestricted warfare—written independently but published by the Chinese People's Liberation Army Literature and Arts Publishing House—stipulates that nothing is forbidden, as there are no rules in war."¹¹¹ Their irregular ways and means include the "Three Warfares" of psychological, media, and legal operations (lawfare) used as levers of influence to achieve political objectives short of war.¹¹² These concepts enable action within the grey zone, which is hard to identify and define. Their actions happen covertly and clandestinely, ensuring that some manner of objective is achieved while attempting to minimize adversarial awareness and reactions.¹¹³

U.S. Non-State Adversaries

Although state-sponsored IW is globally prolific, states are not the only actors. The IW core also includes non-state IW, which has dominated conflict

narratives for the last two decades. Non-state IW conducted by global Salafist jihadi organizations including al-Qaeda and the Islamic State of Iraq and Syria, has created a significant social and political impact.

The Maoist model, developed for Communism, continues to be employed by IVEOs, though contemporary use of this model pairs it with an evolving use of digital information networks and increasing use of terrorism.¹¹⁴ There are a multitude of organizations using Islam to provide the language and rhetoric to fuel their operations and organizations, as “Islam represents the ideological engine legitimizing another period of significant political, economic, and social ferment.”¹¹⁵ The ideological interpretations drive the radicalized politics and reflect grievances, while providing justification and motivation for the organization’s physical power structure.¹¹⁶

IVEOs further justify their actions with Cosmic War theory. This theory states that the images, symbols, and language of divine warfare make the conflict larger than the life of an individual.¹¹⁷ The will of God makes the nature of warfare absolute and so the adherents and organizations are supremely committed and uncompromising. Cosmic warriors perceive the struggle to be a defense of basic identity and dignity. For them, losing the struggle would be unthinkable, because losing represents the complete destruction, not only of themselves but also of their society. When the real world struggle is seen as a sacred war that is blocked or cannot be won in real time, then it can be reconceived on a sacred plane. Cosmic warriors easily justify radical ideology, violent operations, high risk, and martyrdom.¹¹⁸ The sacred struggle is the underpinning idea behind the Islamist jihadi’s altruistic motivation. His/her posthumous interest in fighting and dying for the revolution is that the war, or jihad, is the instrument of religion.¹¹⁹

The paradigm of non-state IVEOs is relatively easy to understand and paradoxically exceedingly difficult to eradicate. These are clandestine organizations built on a foundation of Islamist ideology and motivated by Cosmic War ideas. They employ a long-term vision and strategy of resiliency and survivability to prolong conflict. Success equals continued conflict, which leads the United States and the West into economic and political defeat and a return to isolationism, establishing beneficial conditions for an Islamic caliphate.¹²⁰ The clandestine organization has also recognized that by affiliating and franchising locally and regionally, the movement will propagate globally even if a local affiliate is annihilated. Local affiliation produces buy-in from stakeholders, providing a grass roots connection to the global

movement and thus ensuring that in the event an affiliate is annihilated, the base can then recreate or replace it.¹²¹ The Islamist ideology underwrites the social narrative, which further propagates the movement and ensures long-term survivability.

The Environmental Structure

The current structural environment which houses the subcritical IW core mass is hospitable to the growth and success of IW as a strategy. Environmental factors including the reduced ability of states to compete conventionally, globalization complexity, global population, and the information age, have significantly contributed to the overall volatility.

The first environmental factor revolves around the United States' conventional warfare hegemony, which has given impetus to the rise of IW. American adversaries' IW capacity has developed as a direct response to America's conventional warfare multi-domain dominance.¹²² The American military's size, scope, capability, and reach in the air, on land, in the sea, and in space, coupled with the American willingness to fund and resource this military, has made it unlikely that any one nation, state, or people can directly challenge the United States with high-intensity conventional warfare. Because of this fact, adversaries are finding alternative means to challenge the United States. If direct military confrontation is unlikely to produce the desired strategic objective, then an adversary will seek other opportunities by employing their instruments of power in an indirect manner.¹²³ This has manifested in indirect strategies of erosion that utilize IW.

The next significant environmental factor is population. Currently the global population is estimated at seven and a half billion.¹²⁴ This is an exponential growth from a population that only reached its first billion around 1800, and then exploded during the 20th century reaching 2 billion in 1927, 3 billion in 1960, 4 billion in 1974, 5 billion in 1987, and 6 billion in 1999.¹²⁵ This increased population leads to increased competition and cooperation for the earth's limited resources, and an ever-increasing portion of the global population that has significant grievances based upon resource competition.

The post-Cold War era of globalization, in which the speed of travel, information access, and real time communications have all increased, has resulted in organizations, including businesses and criminal enterprises, becoming truly multinational. Correspondingly, competition and cooperation for

resources among these groups has become more acute.¹²⁶ The manner with which the global connectivity of the information age has enabled the progress of the global population towards achieving greater freedom and self-determination is a significant factor in encouraging IW. The proliferation of available information pertaining to the ends, ways, and means of revolutionary change and IW tactics means that “subjugated people everywhere will continue to rise up against repressive governments—and the enemies of those repressive governments will continue to aid those insurgents.”¹²⁷

The information age and the use of the internet has further exacerbated the complexity of population interaction in this environment, giving particular benefit to non-state actors. IW organizations have become adept at using technology, the internet, and the information age to spread their narrative. They use these mediums for informational, operational, and intelligence purposes, including recruitment, radicalization, secondary socialization, and public affairs.¹²⁸ The information age has enabled the progress of the global population toward achieving greater freedom and self-determination, while also contributing to the rise and efficiency of violent organizations. These environmental factors are not the linear cause of the rise of IW. Rather, they are fundamental aspects of the contemporary environment, which as a result are contributing factors to IW. These characteristics have created a structure that is optimal for the emergence of collective behavior related to IW.

In sum, this section has sought to describe the subcritical core mass of IW actors by describing relevant history and theory. The description of the contemporary IW paradigm and environment structure is intended to set the conditions for understanding how this core mass can reach criticality, and how that reaction may create significant negative effects. The next section will describe IW reflective lenses, the IW critical mass reaction, and the effect of the reaction.

Chapter 2. IW Critical Mass

The previous section described the development of a subcritical IW mass and the environmental structure which surrounds the mass. This structure has facilitated the subcritical mass moving closer to criticality, however, as with the Demon Core, in order to reach criticality, reflective lenses are required to return escaping energy back into the core. Reflection pushes the core toward criticality and a self-sustaining nuclear reaction. The energy of the fissioning atoms, in turn, fissions other atoms. The process multiplies at an exponential rate until the fuel is expended or the explosion expands to such a degree that the core disintegrates.¹²⁹

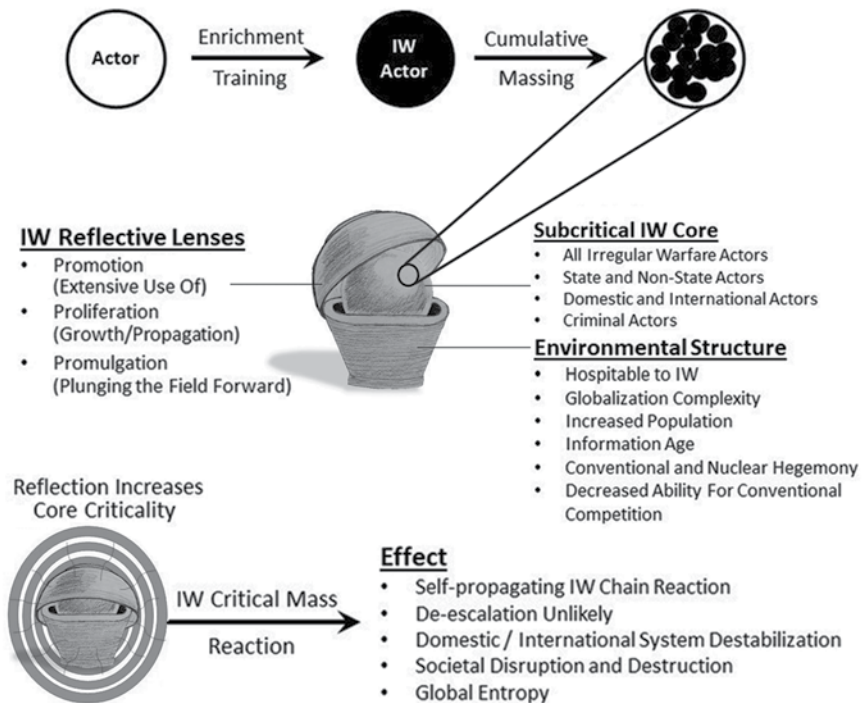


Figure 2. IW Critical Mass. Created by author.

Just as nuclear reflective lenses are essential to pushing a subcritical nuclear core to criticality, so are IW reflective lenses essential to pushing an IW core into a critical state. IW reflective lenses, of course, are not actual

physical objects, but instead are an abstract idea of the effects caused by IW action which returns back to the core mass of IW actors, further driving the actors to react with increased IW activity. As seen in figure 2, in this model the IW reflective lenses are: promotion—furthering the progress of IW; proliferation—increasing the number of IW actors; and promulgation—making IW widely known, generating a plunging effect and pushing the field forward through the mimicking of capacity and capability. The next section will describe each reflective lens and the effect the lens has on the core. This section will generally utilize the United States as an example to describe the lens and the effect of the lens. However, the effect should be interpreted to apply to all IW actors, state and non-state. As such, the reflective lenses return the effect from all actors within the IW core back toward the core. By describing these lenses, and showing how they are in use in the current environment, this section demonstrates that the risk of the IW core reaching criticality is increasing.

IW Reflective Lenses

The first IW reflective lens is promotion. Promotion is furthering the progress of a venture, championing it, supporting it, or actively encouraging it.¹³⁰ The promotion lens can be seen in the United States' own substantial use of IW—an action which is furthering the use of IW as a strategy. As detailed above in the contemporary IW section, the United States commits a substantial amount of resources and emphasis to IW. However, even with that commitment, there is a strong call from U.S. political, military, and academic leaders for an increased special operations role in political warfare, as U.S. adversaries, state and non-state, increase their own IW operations.¹³¹ This is further justified as Russian political influence and hybrid warfare operations, directed against the United States and its allies, continue to be revealed.¹³²

Historically during national security crises, America has increased its risk tolerance and decreased its constraints on IW. This was described above, in the historical reviews of the American Revolution, World War II, and the Vietnam War. This condition of decreased constraints leads to increased IW. As actors such as the United States promote IW, other actors interpret that the ends, ways, and means of IW are a relevant and necessary activity they must also promote.

The next reflective lens is proliferation. Proliferation is the increase in the numbers of IW actors; this is the cultivation or propagation of more actors with the capacity and capability to conduct IW.¹³³ Proliferation is achieved by different paths; states can internally grow their own forces, or they can create proxy or surrogate forces externally. Returning to the metaphor, consider that if every person is capable of violence, and therefore similar to a molecule of Uranium 238, then each trained IW individual can be likened to a more-dangerous enriched fissile Uranium 235 molecule. These enriched actors are trained, equipped, motivated, and organized for violence, making it more likely that an IW reaction will occur, given the availability of fuel.

The United States, for example, has recently developed new IW actors both internally and externally. United States Special Operations Command (USSOCOM) established Marine Corps Forces Special Operations Command (MARSOC) in 2006. With a force of nearly 3,000, MARSOC personnel are “complex problem solvers able to operate across the full spectrum of special operations in small teams under ambiguous and austere environments.”¹³⁴ In Afghanistan, the U.S. strategy for enhancing security and stability includes “doubling the size and capabilities of the Afghan Special Security Forces (ASSF).”¹³⁵ ASSF are considered the most capable and effective forces in the region.¹³⁶ These two specific examples are given to demonstrate growth from a small selection of actors.

Seemingly every example of IW proliferation comes with a reasonable and justified objective from the organization which sponsored the growth. However, the action still has a reflective effect. Each and every example of proliferation diffuses the capacity and capability to conduct IW to an increasingly larger population base. The continued proliferation of IW by state and non-state actors ensures that the capability will be sufficiently diffused among the global population in such a way that it can no longer be controlled by any single or combined grouping of geopolitical powers. The global population will be so saturated by IW capability that an IW critical mass can develop, and, once started, there is an increased likelihood that geopolitical entropy will develop.

In an effort to illuminate the described IW power diffusion condition, it is possible to contrast it against conventional warfare and nuclear warfare. Nuclear weapons and the ability to conduct nuclear war are held by a relatively small number of the geopolitical community. It is therefore possible for this small community to escalate and de-escalate as they see fit. While

these powers could undertake nuclear war, they can also de-escalate and avoid the resultant “Mutually Assured Destruction” likely to result from global nuclear warfare.¹³⁷ In other words, the small number of actors can agree to keep a critical mass from developing.

A similar condition exists in conventional warfare. The exorbitant materiel costs of maintaining and employing conventional warfare capabilities sufficient to achieve political objectives, as well as the negative costs which would result from global conventional war, significantly limits the number of geopolitical actors who have the capability or will to use such a strategy. Again, a relatively small number of actors can escalate and de-escalate according to their own requirements. Similar to nuclear war, a conventional war critical mass is unlikely to develop because the cost is too high and only a few have access to the means. In contrast, the cost of IW is relatively low and the number of actors with access to IW is exponentially higher, as shown in figure 3. The power to wage IW has been diffused to a rapidly growing population which is increasingly in competition and aggrieved. The effect created from the proliferation reflective lens is significant, as with every proliferation action, reaction, and counteraction by any and all global IW actors, the risk of the metaphorical IW chain reaction increases.

The third identified IW reflective lens is promulgation. Promulgation is communicating, or making IW widely known.¹³⁸ Promulgation creates a ‘plunging’ effect, pushing the entire field of IW actors forward. The theory of plunging states that, as an actor releases or utilizes a specific military capability, it forces adversaries to mimic and develop their own like capability.¹³⁹ All actors who wish to compete, therefore, will usually adopt new technologies as quickly as they can. Never before has so much information on U.S. IW activity been so widely available. From memoirs, to movies, leaks, books, doctrine, and scholarly writing, the United States produces a significant amount of information on the conduct of contemporary IW. This may make the United States better able to carry out IW, but these communications also provide a great source of information that adversaries can use to better their own IW. In line with the theory of plunging, it is also likely that, as information on U.S. IW organizations becomes known, adversaries are building IW-like organizations. The massive scope and scale of the current U.S. special operations enterprise makes it difficult to contain or restrict this information. Therefore, it is likely that U.S. adversaries, following the U.S. model, will continue to develop highly-capable and technologically enabled

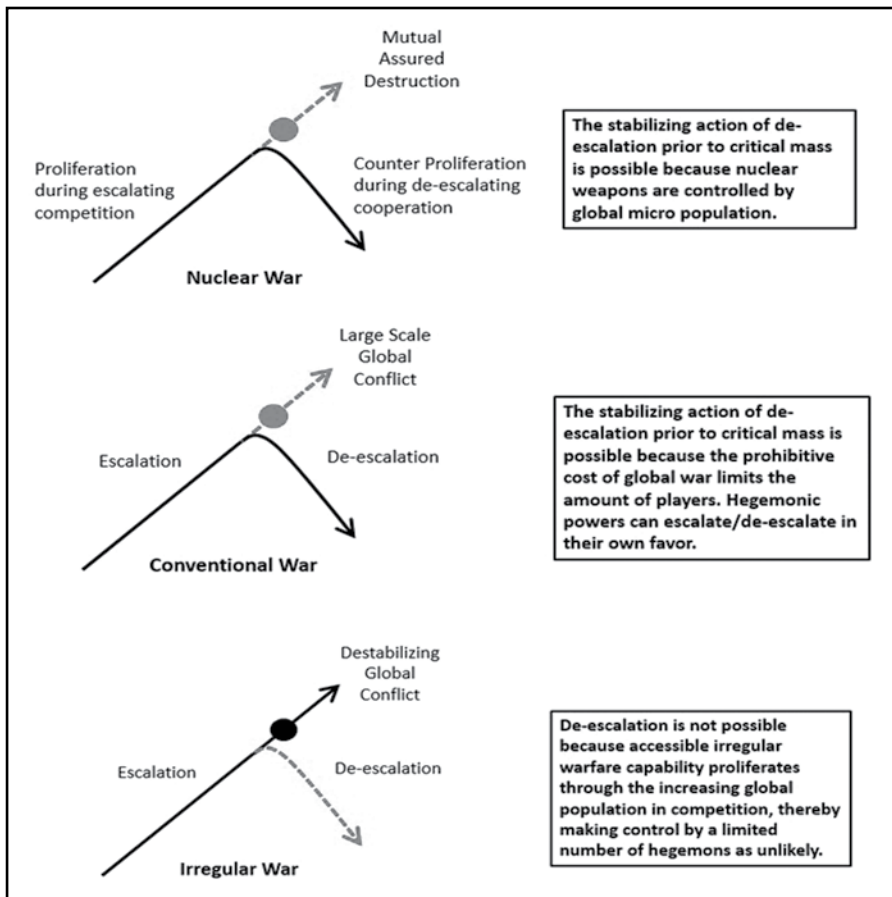


Figure 3. Power Diffusion Effect. Created by author.

covert and clandestine special operations and IW organizations in order to challenge the United States' capacity and capability in this field.

The more the United States promulgates or reveals about its own SOF, the more likely that its state and non-state adversaries will attempt to mimic these entities. It would therefore seem that, following a classic conflict spiral, the United States would then attempt to develop even more irregular and secretive organizations.¹⁴⁰ As Richard Bissell, the former head of CIA covert activities noted in his memoirs, "Most large operations cannot be truly secret."¹⁴¹ Focusing a large organizational effort toward covert and clandestine warfare would seem to violate Bissell's hard-earned understanding of covert operations. In other words, any large scale IW activities by the United

States—as are currently occurring—will also likely feed the IW chain reaction and produce unintended consequences within the complex geopolitical system.

It is important to note that mimicking or plunging by adversaries is not inevitable upon the promulgated release of a capability. Adversaries may choose to pursue other options or not develop like capacity and capability for multiple reasons. However, this paper argues that promulgation is an IW reflective lens. While not all adversaries will choose to develop IW capabilities, there is significant potential that at least some will, and over the long term there is a likelihood that promulgation leads to a plunging, adding to the IW core mass.

An alternative perspective on plunging would be to look at the United States' potential incorporation of their adversaries' IW ways and means. When contrasting the current U.S. IW paradigm against its adversaries' IW paradigm, arguably the United States could increase its own effective IW ways and means by incorporating its adversaries' ways and means.¹⁴² It is possible that in future conflict, the United States could approve of increasingly unethical, immoral, and currently illegal activities, if it felt the ends justified the means. The moral calculus of this possibility is dangerous. For any state, the ability to maintain good standing within the international community requires a state to follow commonly accepted norms of behavior that outline legitimate and illegitimate forms of warfare. Following these norms increases a state's ability to have influence within the current global community.¹⁴³ If the United States were to erode this foundation of good standing, it would likely be less effective in any geopolitical competition requiring allies.¹⁴⁴

Increasingly unethical, immoral, or illegal covert action is not inevitable, nor is it predetermined. In fact, covert action can be an effective element of any political and military strategy.¹⁴⁵ Effective covert action takes advantage of adversary's cognitive blind spots and does what is unexpected, making the action irregular. Such covert action is not necessarily unethical. However, if the United States adopts the IW paradigm of its adversaries, there is a risk of covert action being taken which is dissonant with U.S. or international community values.

The current American special operations paradigm includes significant and justifiable constraints against IW ways and means. Constraints on U.S. IW classified as covert action come in many forms and include legal, moral, and social restrictions.¹⁴⁶ In April of 2017, CIA Director Pompeo stated:

We do not pursue covert action on a whim without approval or accountability. There is a comprehensive process that starts with the President and consists of many levels of legal and policy review and reexamination. Let me assure you: When it comes to covert action, there is oversight and accountability every step of the way.¹⁴⁷

State adversaries are required to constrain their activities to some degree because of international and domestic law, albeit to their own subjective interpretation. However, non-state asymmetric adversaries of the United States are not similarly constrained. For example, there are very few constraints in how IVEOs conduct IW.

Terrorist attacks against civilian targets, conducted globally, as well as suicide operations and execution videos demonstrate that the moral and ethical considerations of Western states do not bind the actions of non-state IW actors. It would also seem that these stateless organizations are not bound by domestic or international law. Therefore, it is logical that, as long as the actions can reasonably be defended as legitimate to the members of the non-state group—for example, within a group's specific interpretation of Islamist Sharia Law and ethical and moral teachings—then these groups will justify, accept, and continue such actions.

If the United States were to incorporate the ways and means of its adversaries, this could lead to increasingly unethical, immoral, and illegal activities.¹⁴⁸ The more morally dubious the IW activities, the more likely that the United States' moral and ethical standing would decrease. The already extensive footprint and global operational activities of USSOCOM could have a devastating impact on the international system if their predominant activities switch from more benign security force assistance to more malign political influence activities.¹⁴⁹ This study categorizes such malign IW activities as reflectors, and ones that would be a significant catalyst to a self-propagating IW chain reaction. Thus, the plunging advance of ethically questionable IW activities could, if adopted by actors such as the United States that are currently more constrained, lead to increasing violence.

In sum, the reflective lens metaphor model is designed to represent how IW actors' actions—promotion, proliferation, and promulgation—are reflecting back upon the core mass of IW actors, and thus driving the whole toward increased irregular war. Once the core mass of IW actors goes critical, then the disruptive effect will be significantly detrimental to global society as a

whole. The next section will discuss the overall effect of the IW critical mass reaction and effect.

Effect of the IW Critical Mass Reaction

The final aspect of the Demon Core metaphor that needs to be addressed is the radiant effect caused by the IW critical mass and chain reaction. The ionizing effect of gamma radiation on biological cells can be delivered in two different scenarios, acute and protracted. In each scenario the cellular damage can be lethal, dependent on the dosage and the amount of time of exposure. Cellular change from the radiation dramatically affects the cells' odds of survival. In lethal cases, the radiation creates such significant damage that the overall physical stress on the system is so severe that the whole system cannot cope and therefore collapses.¹⁵⁰

The radiation metaphor is used to represent the effect of exposure to instability caused by an IW critical mass. The idea is that the cumulative effect of exposure to both acute and protracted violence will erode normative international and national institutions, governments, rule of law, and societies. The resultant effect will be that these norms will no longer effectively function. It should be noted that the primary goal of revolutionary violence is a change of the status quo.¹⁵¹ Therefore, the resultant effect of the individual IW conflicts needs to be evaluated with an eye toward the overall global scope and scale, in order to see that the cumulative effect of a critical mass of IW conflicts would be severe.

The proliferation of IW strategies means that conflict can be initiated by any one of a number of groups, and therefore ending these conflicts is not something that two states can simply agree to do, or implement and enforce on their populations. Geopolitical actors now know that ending a conflict is a decision that all actors involved must agree upon. If any actor disagrees with the decision to end, then the conflict will continue into perpetuity, for in the information age it is increasingly difficult to eradicate an idea, an ideology, or a group that might recruit combatants to support their goals.¹⁵² Conversely, it is increasingly possible for relatively small actors to produce sufficient friction within the complex system of geopolitical interactivity that can result in changes to the system. This friction now commonly manifests as IW. The damaging effects of IW activity do not only pertain to international conflicts. States, including the United States, are at internal risk from the

effects as well. Internal risks can result from the blowback of unintended consequences, from domestic actors turning against the state, or internal IW activities externally directed by adversaries

Guerrilla warfare often produces savage violence from both sides. Depending on the level of violence, change becomes inevitable, as return to the previous status quo is unlikely.¹⁵³ The effect of the violence upon the actors causes irrevocable changes to the dynamics of the area involved in the violence. Whether the government or the revolutionary forces are the victors, the social wounds often run deep and grievances remain for long periods. As in any conflict, a reactionary desire to return things to normal, as they were before the conflict, is an impossible goal. In essence, the conflict affects the fundamental makeup of the structure and actors.¹⁵⁴

Multiple IW conflicts, causing great friction in the international system, and fundamental changes to the status quo around the world, could lead to a critical mass which produces a chain reaction of perpetual self-propagating IW activity. It is then possible that the IW critical mass will produce so much friction in the complex geopolitical system that the system can never stabilize or achieve homeostasis. The system will never settle long enough for significant structured progress to occur; this condition will result in global entropy. The natural tendency of entropy will be fed by the IW critical mass and the increased global population in resource competition, until eventually the number of destabilizing actors will far exceed the stabilizing actors. This will result in a permanent disruption and the irrevocable destabilization of the global status quo.

While the scenario described in this section is bleak, indeed, it follows the logic of critical mass and chain reaction. Promotion, proliferation, and promulgation of IW activities may provide enough reflected energy back at the core of actors that such an outcome becomes likely. This, however, is not the only potential outcome the future holds.

As in any conflict, a reactionary desire to return things to normal, as they were before the conflict, is an impossible goal.

Chapter 3. Recommendations

Possibly the most important aspect of the IW Demon Core metaphor is that there is no realistic way to know when or if the core has gone critical, because it is an abstract idea. If the IW core continues to be enriched, reflected, and housed within an environment that proliferates IW activity, then the core will continue toward criticality. This is where the metaphor and reality diverge. The scientists of the Manhattan Project were conducting experiments to measure and understand when uranium cores would go critical. In contemporary IW, there is no scientific method to measure or know if the global cumulative population of IW actors will ever go critical, is moving toward criticality, or is already critical. Therefore, the prescriptive approach to deal with the problem must holistically deal with all outcomes, including the worst-case scenario.

This study has shown that, over time, a large group of IW actors has developed globally. Sufficient IW actors, both state and non-state, now exist that, metaphorically, an enriched core mass of IW actors has coalesced. This core is housed in an operational structure, or environment, which contributes to the core's survival and success. Enabling environmental structural factors pushed the core toward criticality. The reflective activity has raised the criticality of the IW core, taking it from being a dangerous but relatively stable mass of actors, to an uncontrollable mass that may become—or already is—a self-propagating chain reaction of IW activity. This section offers recommendations for a strategy to address such an IW critical mass. The strategy has three active efforts designed to limit any ongoing or potential critical reaction. Stakeholders must first remove reflective lenses to decrease core criticality. Second, stakeholders must insert rods to control the reaction. And third, shielding material must be built for protection from the IW effects.

Deconstructing the hospitable environment and structure which houses the core is an unrealistic proposition. Decreasing global population, limiting the global information network, or decreasing the challenges of resource competition are unlikely solutions. It is not a stretch to say that there have been and will always be large populations of humans with grievances, either political, social, economic, or otherwise, which will seek change through either violent or nonviolent means. Therefore, the first active effort to

decrease core criticality is the removal of the IW reflective lenses: promotion, proliferation, and promulgation. The removal of the reflective lenses is equivalent to ceasing or decreasing actions that are actively increasing the core's criticality. The goal is to reduce the overall criticality of the mass and stop growing the mass through increased enrichment.

Counter-promotion efforts may be easier said than done. Reducing state and non-state actors' reliance on IW as a key piece of strategy will be difficult. IW certainly is a trending contemporary strategy, however, it is also not a panacea for global competition. IW is as unlikely to produce lasting stability as nuclear or conventional-based strategies were. But just as states have been able to move away from high intensity competition through nuclear and conventional means, states may also be able to move away from irregular competition. If stability is an objective of the majority of global actors, then counter-IW promotion can be undertaken holistically, with strategies to reduce conventional, nuclear, cyber, or other disruptive competition. Though it is counterintuitive, could the idea of increasing the ability to compete conventionally reduce the need to compete irregularly? Although, as with any design solution, a new set of design challenges would be presented. The idea of increasing conventional capabilities and conflict to reduce irregular conflict raises numerous, serious problems of its own.

Counter proliferation is potentially a more realistic way to limit IW. IW actors have the capability to stop enriching the core with more IW actors. The global population would undoubtedly benefit from having fewer criminals, pirates, rebels, guerrillas, and insurgents operating within it. And while some of these groups will self-generate, it is possible to limit the self-generation through good social, political, and economic policies. Limiting, reducing, or eliminating state-sponsored production of proxy irregular forces with systems such as international law or treaty, such as the Chemical Weapons Convention, is a more feasible and realistic proposition. Currently throughout the Middle East, Southeast Asia, South America, and Africa, countless armed groups have been organized, trained, equipped and employed by nations for national objectives. If governments decided to not use proxies, the IW core would potentially slow its growth. This is, metaphorically, the stopping of the enrichment of Uranium-238 into weapons grade Uranium-235.

If states actively conducted IW counter-proliferation, by both decreasing IW actor enrichment and reducing their own IW activities, two significant controllable reflectors would be removed. Lessons from conventional warfare

and nuclear warfare counter-proliferation can educate this process, and show a path forward to changing global norms on the use of IW. States can recognize that the danger of IW is great both domestically and internationally. Sponsoring IW inside other states for asymmetric competition is increasingly fraught with danger. IW invites retaliation from the target, and this risk of escalation—and of a destructive cycle of violence—is clear. Should counter-IW proliferation norms be accepted in the international community, the effects of power diffusion, plunging, and mimicking will be reduced.

Decreasing the plunging effect created by extensive promulgation could be achieved by reducing the availability or advertising of IW. Reducing promulgation can be accomplished by either reducing the amount of IW conducted, and/or by increasing the secrecy of IW activities. Reducing the amount of IW operations would mean limiting IW only to circumstances which truly require their use. In a similar vein, nuclear weapons are intended as a weapon of last resort only to be used under the most critical of circumstances. IW should be considered in the same way, only to be used when the ends justify the means. Additionally, an increase in the secrecy of overt, covert, and clandestine IW would proportionally decrease the availability of information on IW, and decrease the plunging effect that revealing such activities has on adversaries.

Beyond simply removing the reflectors, the second effort to address the IW critical mass is the insertion of control rods to help control the reaction. When a nuclear reactor is put into service in a power generation plant, one of the most common methods available to regulate the reaction is the use of control rods. Control rods, made of neutron-absorbing material, are either inserted or removed from the reactor to adjust the rate of the reaction. Metaphorically, IW control rods can be equated to any active measure that seeks to decrease the criticality of IW activity. These measures include smart power approaches that make use of all the elements of national power—diplomatic, informational, military, economic, financial, intelligence, and law enforcement—rather than relying on IW to attain policy objectives.¹⁵⁵ Creating counter-IW rules of law, both internationally and domestically, that are backed up by counter-IW actors at the local, national, and international levels, can be sought by the global community. For example, the United States must continue to stringently adhere to the existing IW constraints of law, approval, and oversight. By staying within the existing constraints, and

encouraging others to adopt similar constraints, the United States ensures that IW is less likely to tread into illegal, unethical, or immoral areas.

On a global scale, states could create functional bilateral and multilateral treaties or agreements to contain, control, and reduce IW actors and activity. States can seek to regain control of the environment from rogue IW actors by creating an inhospitable environment where a community of states are allied against IW, much the same as when non-state piracy and state sanctioned privateering was essentially defeated by the implementation of an effective law of the sea backed up by willing and cooperative state naval power.¹⁵⁶ In that case, states understood that the ultimate economic benefit would come from a relatively safe and open ocean system where commerce could prosper; in the case of IW, global economics would also prosper with more stable areas and fewer IW actors.

It is also imperative that police, paramilitary, military, and intelligence forces across the globe act as IW neutron absorbers and not producers. These forces must be turned from being reflective lenses which proliferate the growth of IW into absorption material which seeks to eradicate IW. The positive aspect to this approach is that in many cases and places, these forces are already in position and trained to help support, advise, and assist partnered foreign security elements. In addition to training stabilizing forces, demobilization programs may also serve as absorbers. Demobilization of IW actors is a key task in limiting the actors available to participate in an IW conflict and reducing the criticality of the IW core mass.

The third effort required to deal with an IW critical mass is the building of shielding material to protect from the dangerous effects of IW activity.

Lead shielding can be seen in most situations where radiation is expected at higher levels, from the nuclear power reactor to the blanket used at the dentist's office during an x-ray.

Lead is a common element used by practitioners to shield people from the harmful effects of nuclear radiation. Lead shielding can be seen in most situations where radiation is expected at higher levels, from the nuclear power reactor to the blanket used at the dentist's office during an x-ray. The international community can begin to build shielding material throughout societies to protect from the harmful effects of IW activity. Shielding means that global leaders in politics, economics, and elsewhere understand the effects of IW activity and seek to protect their own and others' populations from the dangers.

IW shielding can be created by states and international institutions both domestically and internationally. Shielding populations from the effects of IW begins with communicating and understanding what IW is and what threats it presents to a population. This should make the population less susceptible to participating in IW activities.

In sum, a prescriptive approach to holistically counteract the self-propagating chain reaction of IW includes three recommendations. Global IW actors must first remove IW reflective lenses; this equates to IW counter-promotion, counter-proliferation, and counter-promulgation. Next, global actors must insert IW-absorbing control rods. The building of counter IW actors and structure will decrease the risk of an uncontrollable IW critical mass. Finally, global actors must build protective shielding material to protect societies from the negative effects of IW. Protective shielding includes building institutions and societies that are resistant to destabilizing effects. This can be done by creating a mass understanding of the risks IW poses. All three recommendations should be implemented simultaneously to limit the risk of IW criticality and the effect of destabilizing influences.

Conclusion

The IW Demon Core is a metaphor used to describe the danger associated with the current uncontrolled and prolific use of IW as a tactic and strategy of global actors. The core represents a large subcritical mass of global state and non-state IW actors. The core mass of actors exists within an enabling contemporary operating environment. Structural factors such as globalization, complexity, increased population, and the information age have contributed to the formation of the mass. Furthermore, state nuclear and conventional warfare hegemony has increased asymmetry and decreased the ability of actors to compete conventionally. The result of this has been the emergence of IW as a prominent strategy by global actors.

Like a uranium core being pushed toward criticality with neutron reflectors, the IW core mass is also being pushed toward criticality by theoretical reflective lenses. The reflective lenses of promotion, proliferation, and promulgation return the IW actor's energy back to the core mass, driving other actors to react with increased activity. The cumulative effect of the returning energy is to push the entire IW core toward criticality and an uncontrolled IW reaction. The result of the IW reaction is a negative effect, one which will destabilize domestic and international systems, disrupt and destroy societies, and lead to global entropy.

The theory of IW revolves around the concept of a power imbalance, or asymmetry, between combatants. When such an asymmetry exists, then disarming or destroying a more powerful enemy through direct confrontation—annihilation/attrition—is not a viable strategy, and instead, erosion is likely to be the selected strategy. The strategy of erosion through IW can be seen in the historical campaigns of Washington's Forage War, Napoleon's Peninsular War, the Arab Revolt, and during World War II. Erosion has been further codified in the classic writings of Clausewitz, Marx, Mao, and Lawrence. During the Cold War, the United States and the Union of Soviet Socialist Republics (USSR)—deterred from active conventional conflict competition—engaged in extensive IW. The post-Cold War and contemporary environment have cemented IW as a prominent strategy of global state and non-state actors.

A review of IW theory, history, and doctrine makes it clear that a significant number of IW actors have existed over time and continue to exist

and operate globally today. The structural factors, core mass, and reflective lenses have diffused the power, capacity, and capability to conduct IW to a sufficiently large portion of the global population in competition. The power diffusion reduces the ability of any single or combined grouping of hege-

The structural factors, core mass, and reflective lenses have diffused the power, capacity, and capability to conduct IW to a sufficiently large portion of the global population in competition.

monic powers to de-escalate the reaction.

The danger is that this mass of actors will continue to feed a self-propagating chain reaction of IW activity that is releasing increasingly dangerous levels of destabilizing effect. The negative effect from violence, and social and political instability, is less visible, more difficult to discern, and slower to manifest, yet will ultimately yield as devastating a result as the most visible and destructive forces previously known. This condition has the potential to irrevocably change the global peace and security status quo.

The development of IW theory and practice seen throughout history, as well as the IW doctrine of the contemporary operational environment, demonstrates that a core mass of IW actors not only exists but continues to be significantly active. This global mass of IW actors exists and operates within an enabling environment which is hospitable to their growth, existence, and strategy. Each action taken by these actors has a disruptive effect. Their actions reflect back to the core mass driving other IW actors to react or respond with their own IW action. The cumulative effect is that the core mass is uncontrollably driving itself toward growth and increasingly destabilizing IW effects.

The theoretical IW reflective lenses provide an abstract cognitive description intended to help understand how IW energy returns back to the core mass and drives reaction. The IW reflective lenses are: promotion—furthering the progress of IW; proliferation—increasing the number of IW actors; and promulgation—making IW widely known, generating a plunging effect and pushing the field forward through the mimicking of capacity and capability.

Three prescriptive approaches can be simultaneously taken to control the chain reaction. First, the international community must remove reflective lenses in order to reduce the risk of the core going critical. Removing the reflective lenses is equated with state and non-state IW counter-promotion, counter-proliferation, and counter-promulgation. Reducing state

and non-state actors' reliance on IW as a key piece of strategy is counter-promotion. Lessons from how to proceed with IW counter-proliferation, reduction in growth, can be learned from the past experience of nuclear and conventional war counter-proliferation activities, modified for IW. Such lessons would include smart power approaches through all the instruments of national power including diplomacy, economics, and information.¹⁵⁷ Counter-promulgation efforts would include reducing the availability or advertising of IW by reducing the amount of IW conducted, and/or by increasing the secrecy of IW activities.

Second, the international community must act as if the IW mass has already gone critical, and add control rods in an attempt to absorb current IW activities and slow the process of encouraging these activities. Inserting absorption rods to control the reaction can be likened to creating effective international law, norms, and regulations that discourage IW, backed up by international recourse and sanctions against violators. Functional bilateral and multilateral interstate treaties against IW can also be created.

Finally, the international community must build shielding material to protect against the harmful disruptive effect of IW. This is similar to using a lead shield to protect against gamma radiation. Building shielding material can be done domestically and internationally. It must be communicated to all state actors that ultimately they are at a great risk of their own IW activities against their adversaries boomeranging back and attacking their own domestic government. States can also build internal inoculation and resiliency against IW by increasing the population's understanding of IW and coalescing domestically around social and political norms. If these steps—building protection from the harmful effects of a chain reaction while simultaneously refraining from taking active and passive measures to decrease the likelihood of an IW critical mass—are not taken, this paper argues that the global community places itself in significant risk of a disruptive effect that may drastically shift the international system toward a state of conflict and entropy.

Despite understanding the danger, the Manhattan Project scientists continued to tickle the dragon's tail or tease the core toward critical reaction. In multiple incidents, their overconfidence led to mistakes which directly resulted in their deaths. The risk from the negative effect of cumulative global IW is as real as nuclear radiation. It is important that global actors recognize that the danger from IW is potentially as high as the danger from

conventional and nuclear warfare. The effects, initially less visible, more difficult to discern, and slower to manifest, will yield a significant amount of net negative energy on the global community. If stability is an objective of global actors, then IW de-escalation through counter-promotion, counter-proliferation, and counter-promulgation must be holistically undertaken along with strategies to reduce conventional, nuclear, cyber, and other disruptive competition. IW must not be casually used as a convenient outlet for competition below the threshold of war, because the potential damage of unlimited IW is significant and lasting.↑

Acronyms

ASSF	Afghan Special Security Forces
AUMF	Authorized Use of Military Force
CIA	Central Intelligence Agency
GRU	<i>Glavnoye Razvedyvatelnoye Upravleniye</i> military intelligence service of the Russian Federation
GWOT	Global War on Terror
IRGC	Islamic Revolutionary Guard Corps
IVEO	Islamist Violent Extremist Organizations
IW	irregular warfare
JP	joint publication
KGB	<i>Komitet Gosudarstvennoy Bezopasnosti</i> Soviet Security and Intelligence Service
MACV-SOG	Military Assistance Command-Vietnam Studies and Observations Group
MARSOC	Marine Special Operations Command
OSS	Office of Strategic Services
SOF	Special Operations Forces
USASOC	United States Army Special Operations Command
USSOCOM	United States Special Operations Command
USSR	Union of Soviet Socialist Republics
UW	unconventional warfare

Endnotes

1. Alex Wellerstein, "The Demon Core and the Strange Death of Louis Slotin," *The New Yorker*, 21 May 2016; Harry Lusting and Kirsten Shepherd-Barr, "Science as Theater," *American Scientist* (November–December 2002).
2. Chuck Hansen, *US Nuclear Weapons: The Secret History* (New York, NY: Orion Books, 1988), 11–27.
3. Cynthia Kelley, ed., *The Manhattan Project* (New York, NY: Black Dog and Leventhal Publishers, 2007), 436–438.
4. Sarah Bridger, *Scientists at War: The Ethics of Cold War Weapons Research* (Cambridge, MA: Harvard University Press, 2015), 1–30.
5. Yaneer Bar-Yam, *Making Things Work: Solving Complex Problems in a Complex World* (Cambridge, MA: Knowledge Press, 2004), 61–62.
6. Michael N. Schmitt and Andru E. Wall, *The International Law of Unconventional Statecraft* (Cambridge, MA: Presidents and Fellows of Harvard College, 2014), 371.
7. Chris Brown and Kirsten Ainley, *Understanding International Relations* (London, UK: Palgrave Macmillen, 2009), 177–191.
8. Andrew Mack, "Why Big Nations Lose Small Wars: The Politics of Asymmetric Conflict," *World Politics*, Vol. 27, no. 2 (January 1975): 175–200.
9. Leo J. Blanken, "Slowing Down to Keep the Lead in Military Technology," *Defence and Peace Economics*, Vol. 22, Issue 3 (June 2011): 317–334.
10. Fred Kaplan, *The Wizards of Armageddon* (Stanford, CA: Stanford University Press, 1983), 340.
11. In this study, homeostasis refers to a state of relative stability between interdependent geopolitical actors.
12. In this study, entropy refers to a state of chaos and disorder between geopolitical actors.
13. John Andreas Olsen and Martin Van Creveld, eds. *The Evolution of Operational Art: From Napoleon to the Present* (Oxford: Oxford University Press, 2011), 137.
14. U.S. Department of Defense, Joint Staff, Joint Publication 1 (JP 1) *Doctrine for the Armed Forces of the United States* (Washington, D.C.: Government Printing Office, 2017), I5.
15. U.S. Department of Defense, JP 1 *Doctrine for the Armed Forces*, I5.
16. U.S. Department of Defense, Joint Staff, JP 3-05 *Special Operations* (Washington, D.C.: Government Printing Office, 2017), III-3.
17. U.S. Department of the Army, *Army Doctrine Reference Publication (ADRP) 3-05 Special Operations* (Washington, D.C.: Government Printing Office, 2012), 9.

18. United States Army Special Operations Command, *SOF Support to Political Warfare: White Paper* (Fort Bragg, NC: 2015): 39.
19. Frank Hoffman, "Hybrid Warfare and Challenges," *Joint Force Quarterly* (2009): 35.
20. Hy Rothstein, *Afghanistan and the Troubled Future of Unconventional Warfare* (Annapolis, MD: Naval Institute Press, 2006), 21.
21. Carl Von Clausewitz, *On War*, ed. and trans. Michael Howard, and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 75.
22. Clausewitz, *On War*, 75–93.
23. U.S. Department of Defense, JP 1 *Doctrine for the Armed Forces*, I4. Annihilation or attrition is characterized as making the enemy helpless to resist, by physically destroying his military capabilities. Erosion is characterized as convincing the enemy that accepting terms will be less painful than continuing to aggress or resist.
24. Chalmers Johnson, *Revolutionary Change* (Stanford, CA: Stanford University Press, 1982), 1–5. The greater discussion of why people seek revolutionary change is not required for a study of revolutionary IW. Commonly, the causes are attributed to man's desire for social change due to grievance, greed, inequality, or superiority. What is important is that revolutionary change is used to even the playing field, to change the dynamics of the conflict to further a militarily weak actor's goals or political ideology.
25. Clausewitz, *On War*, 87.
26. Clausewitz, *On War*, 94.
27. Clausewitz, *On War*, 93.
28. U.S. Department of Defense, JP 1 *Doctrine for the Armed Forces*, I4.
29. John Arquilla ed., *From Troy to Entebbe: Special Operations in Ancient and Modern Times* (New York, NY: University Press of America, 1996).
30. John Arquilla, *Insurgents, Raiders, and Bandits: How Masters of Irregular Warfare Have Shaped Our World* (Chicago, IL: Ivan R. Dee, 2011).
31. Clausewitz, *On War*, 479–483. See also Clausewitz, *On Small War*.
32. Clausewitz, *On War*, 479–483.
33. David H. Fischer, *Washington's Crossing* (New York, NY: Oxford University Press, 2004), 346.
34. Fischer, *Washington's Crossing*, 346–362.
35. Andru E. Wall, *Demystifying the Title 10–Title 50 Debate: Distinguishing Military Operations, Intelligence Activities and Covert Action* (Cambridge, MA: Presidents and Fellows of Harvard College, 2011), 85–141.
36. David G. Chandler, *The Campaigns of Napoleon* (New York, NY: The Macmillan Company, 1966), 593–660.
37. Chandler, *The Campaigns of Napoleon*.

38. Leon Baradat, *Political Ideologies: Their Origins and Impact Fifth Edition* (New Jersey: Prentice Hall, 1994) 168–169.
39. Baradat, *Political Ideologies*, 191.
40. Baradat, *Political Ideologies*, 199, 220.
41. Mao Tse-Tung, *On Guerrilla Warfare*, trans. Samuel Griffith II (Chicago, IL: University of Illinois Press, 2000) 41.
42. Mao, *On Guerrilla Warfare*, 45.
43. Mao, *On Guerrilla Warfare*, 46.
44. William Andrews, *The Village War: Vietnamese Communist Revolutionary Activities in Dinh Tuong Province 1960-1964* (Columbia, MO: University of Missouri Press, 1973), ix-xi.
45. Johnson, *Revolutionary Change*, 150. While Johnson uses the term “attrition,” his concepts are related to the doctrinal terms of erosion, and fit Clausewitz’s definition of erosion.
46. Johnson, *Revolutionary Change*, 150.
47. James White, *The Russian Revolution 1917-1921: A Short History* (London, UK: Edward Arnold, 1994), 151–234.
48. Stanley Karnow, *Mao and China: From Revolution to Revolution* (New York, NY: Viking Press, 1972), 3–20.
49. T.E. Lawrence, *Seven Pillars of Wisdom: A Triumph* (New York, NY: Doubleday, 1926), 192.
50. Lawrence, *Seven Pillars of Wisdom*, 196.
51. James Barr, *Setting the Desert on Fire: T.E. Lawrence and Britain’s Secret War in Arabia, 1916-1918* (New York, NY: W.W. Norton Company, 2008); Malcolm Brown ed., *T.E. Lawrence in War and Peace: An Anthology of the Military Writings of Lawrence of Arabia* (London, UK: Greenhill Books, 2005); Scott Anderson, *Lawrence In Arabia: War, Deceit, Imperial Folly and the Making of the Modern Middle East* (New York, NY: Anchor Books, 2013); James J. Schneider, *Guerrilla Leader: T.E. Lawrence and the Arab Revolt* (New York, NY: Bantam Books, 2011); Michael Korda, *Hero: The Life and Legend of Lawrence of Arabia* (New York, NY: Harper Perennial, 2010).
52. U.S. Army Special Operations Command, *OSS Office of Strategic Services: A Primer on the Special Operations Branches and Detachments of the Office of Strategic Services* (Washington, D.C.: Government Printing Office, 2014). The OSS is considered the predecessor organization to the CIA and the U.S. Army Special Forces (Jedburgh TTP, yes, but patterned after OSS OGs [operational groups]).
53. Will Irwin, *The Jedburghs: The Secret History of Allied Special Forces, France 1944* (New York, NY: PublicAffairs, 2005) xvii-xx; Aaron Bank, *From OSS to Green Berets: The Birth of Special Forces* (Novato, CA: Presidio Press, 1986); John K. Singlaub, *Hazardous Duty* (New York, NY: Summit Books, 1991); U.S. Army

- Special Operations Command, *OSS Office of Strategic Services: A Primer on the Special Operations Branches and Detachments of the Office of Strategic Services* (Washington, D.C.: Government Printing Office, 2014).
54. Fernando Reyeg and Ned Marsh, *The Filipino Way of War: Irregular Warfare Through the Centuries* (Monterey, CA: Naval Postgraduate School, 2011), 59–84.
 55. Sarah-Jane Corke, *US Covert Operations and Cold War Strategy: Truman, Secret Warfare and the CIA, 1945–53* (New York, NY: Routledge, 2008) 6.
 56. Corke, *US Covert Operations*, 1–9.
 57. John G. Breen, “Covert Action and Unintended Consequences,” *Interagency Journal* Vol. 8, Issue 3 (2017): 106–122.
 58. Christopher Andrew and Vasili Mitrokhin, *The Sword and The Shield: The Mitrokhin Archive and the Secret History of the KGB* (New York, NY: Basic Books, 1999); Christopher Andrew and Oleg Gorgievsky, *KGB: The Inside Story* (New York, NY: Harper Collins, 1990).
 59. Andrew and Mitrokhin, *The Sword and The Shield*, 224.
 60. Andrew and Mitrokhin, *The Sword and The Shield*, 225–246.
 61. Andrew and Mitrokhin, *The Sword and The Shield*, 355–363.
 62. Andrew and Mitrokhin, *The Sword and The Shield*, 359–361.
 63. Andrew and Mitrokhin, *The Sword and The Shield*, 389–391.
 64. The Russian General Staff, *The Soviet-Afghan War: How a Superpower Fought and Lost*, ed. and trans. Lester W. Grau and Michael A. Gress (Lawrence, KS: The University Press of Kansas, 2002), 1–34.
 65. Andrew and Mitrokhin, *The Sword and The Shield*, 374–388.
 66. George Crile, *Charlie Wilson’s War* (New York, NY: Grove Press, 2003), ix.
 67. Chalmers Johnson, *Nemesis: The Last Days of the American Republic* (New York, NY: Metropolitan Books, 2006), 103–104.
 68. Gregory A. Daddis, *Westmoreland’s War: Reassessing American Strategy in Vietnam* (New York, NY: Oxford University Press, 2014) xx.
 69. John L. Plaster, *SOG: The Secret Wars of America’s Commandos in Vietnam* (Boulder, CO: Paladin Press, 1997) 1–5.
 70. Douglas Valentine, *The Phoenix Program* (New York, NY: William Morrow and Company, Inc., 1990) 9–59.
 71. Andrews, *The Village War*, 27.
 72. Andrews, *The Village War*, 72–104.
 73. Valentine, *The Phoenix Program*, 9–59.
 74. Mack, “Why Big Nations Lose Small Wars,” 177–178.
 75. Susan L. Marquis, *Unconventional Warfare: Rebuilding U.S. Special Operations Forces* (Washington, D.C.: Brookings Institute Press, 1997), 33–44.

76. Martin Van Creveld, *The Transformation of War* (New York, NY: The Free Press, 1991), 31.
77. The U.S. annually commits almost 600 billion dollars or 16 percent of its federal budget to defense. This is more than the next nine highest spending countries combined and more than three times greater than the next highest spending country, China, who spends roughly less than 200 billion annually.
78. Van Creveld, *The Transformation of War*, 194.
79. Van Creveld, *The Transformation of War*, 194–205. Van Creveld's definition of low-intensity conflict is the same as we define IW today: war waged by terrorists, guerrillas, and other non-normative organizations motivated by fanatical and ideologically-based loyalties.
80. Hy Rothstein, *Afghanistan and the Troubled Future of Unconventional Warfare* (Annapolis, MD: Naval Institute Press, 2006), 3–13.
81. Admiral Eric T. Olson, *United States Special Operations Command Posture Statement before the Senate Armed Services Committee*, 4 March 2008.
82. Barack H. Obama, *Remarks by the President at the Acceptance of the Nobel Peace Prize*, 10 December 2009.
83. David Sanger, *Confront and Conceal: Obama's Secret Wars and Surprising Use of American Power* (New York, NY: Broadway Paperbacks, 2013); Bob Woodward, *Obama's Wars* (New York, NY: Simon and Schuster, 2010); Fred Kaplan, "Obama's Way: The President in Practice," *Foreign Affairs* (February 2016).
84. Jeffrey Goldberg, "The Obama Doctrine," *The Atlantic* (April 2016).
85. General Raymond A. Thomas III, *United States Special Operations Command Posture Statement before the Senate Armed Services Committee*, 4 May 2017; Australian Government Department of Defence, *Defence Annual Report 2015-2016* (Canberra, Australia: 2016), 89; United Kingdom Ministry of Defence, *UK Armed Forces Monthly Service Personnel Statistics 1 February 2017* (London, UK: 9 March 2017), 5. USSOCOM consists of 70,000 people (56,000 active, 7,400 guard/reserve, 6,600 civilians), making up 2 percent of the DOD manpower and using 2 percent of the DOD budget. As a comparison, in 2015 the entire Australian Defense Force (Army, Navy and Air Force) consisted of 58,000, and the United Kingdom Army in 2017 consisted of 82,000 full-time trained soldiers.
86. U.S. Department of the Army, *Army Doctrine Publication (ADP) 3-05 Special Operations* (Washington, D.C.: Government Printing Office, 2012), 6. Special warfare consists of combinations of lethal and nonlethal action through, by, and with indigenous populations in politically sensitive and or hostile environments. Surgical strike is the precise execution of activities to seize, destroy, capture, exploit, recover, or damage targets or influence threats in hostile, denied, or politically sensitive environments. The U.S. conducts special warfare and surgical strikes through core operations and core activities. Core operations include unconventional warfare, foreign internal defense, counterinsurgency, counterterrorism, combatting weapons of mass destruction, stability operations, support to major combat operations and campaigns. Core activities include direct action,

Special Reconnaissance, military information support operations, civil military operations, preparation of the environment, and recovery operations; Andru E. Wall, *Demystifying the Title 10-Title 50 Debate: Distinguishing Military Operations, Intelligence Activities and Covert Action* (Cambridge, MA: Presidents and Fellows of Harvard College, 2011), 85–141. Congressional statutes define covert action as an activity or activities of the United States government to influence political, economic, or military conditions abroad, where it is intended that the role of the United States government will not be apparent or acknowledged publicly. Covert action does not include activities in which the primary purpose is to acquire intelligence, traditional counterintelligence activities, traditional activities to improve or maintain the operational security of United States government programs, or administrative activities; traditional diplomatic or military activities or routine support to such activities; traditional law enforcement activities conducted by United States government law enforcement agencies or routine support to such activities; or activities to provide routine support to the overt activities, other than activities described, of other United States government agencies abroad. Colloquially, intelligence agencies are understood to be primarily the U.S. Central Intelligence Agency (CIA), although the Secretary of Defense does maintain significant authorities under Title 50.

87. Vera Bergengruen, “These Troops Were Killed in Combat During Trump’s First Year in Office,” *Buzz Feed News*, 28 December 2017.
88. U.S. Central Intelligence Agency, *Prepared Remarks by Director Pompeo to Foundation for Defense of Democracies*, 19 October 2017.
89. Rachel Martin, *The Future of the President’s Authorization for Use of Military Force*, National Public Radio Transcript 30 October 2017; General Thomas, *Posture Statement Before the Senate Armed Services Committee*, 4 May 2017.
90. Brian S. Petit, *Going Big by Getting Small: The Application of Operational Art by Special Operations in Phase Zero* (Denver, CO: Outskirts Press Inc., 2013), 2–3.
91. Joseph Votel, Charles T. Cleveland, Charles T. Connett, and Will Irwin, “Unconventional Warfare in the Gray Zone,” *Joint Forces Quarterly* 80 (1st Quarter 2016), 102.
92. Petit, *Going Big by Getting Small*, 6, 166–173.
93. Kyle Johnston, “U.S. Special Operations Forces and the Interagency in Phase Zero,” *Interagency Journal* Vol. 8, Issue 1 (Winter 2017): 76–104.
94. U.S. Army Special Operations Command, *SOF Support to Political Warfare*, 1–3.
95. U.S. Army Special Operations Command, *SOF Support to Political Warfare*, 10–33. USASOC can also support political warfare in security sector assistance, building partner capacity, and information and influence activities through their core operations and activities, including unconventional warfare, foreign internal defense, and military information support operations.
96. Joseph Votel, Charles T. Cleveland, Charles T. Connett, and Will Irwin, “Unconventional Warfare in the Gray Zone,” *Joint Forces Quarterly* 80 (1st Quarter 2016), 108.

97. U.S. Army Special Operations Command, *Little Green Men: A Primer on Modern Russian Unconventional Warfare, Ukraine 2013-2014* (Fort Bragg, NC: 2015): 1; U.S. Army Special Operations Command, *SOF Support to Political Warfare*, 5–6.
98. U.S. Army Special Operations Command, *Little Green Men*, 1–63; Committee on Foreign Relations U.S. Senate, *Putin's Asymmetric Assault on Democracy in Russia and Europe: Implications for U.S. National Security*, 115th Cong., 2nd sess., 2018, v-199; *United States of America v. Internet Research Agency LLC a.k.a. Mediasintez LLC a.k.a. Glavset LLC a.k.a. Mixinfo LLC a.k.a. Azimut LLC a.k.a. Novinfo LLC, Concord Management and Consulting LLC, Concord Catering, Yevgeniy Viktorovich Prigozhin, Mikhail Ivanovich Bystrov, Mikhail Leonidovich Burchik a.k.a. Mikhail Abramov, Aleksandra Yuryevna Krylova, Anna Vladislavovna Bogacheva, Sergey Pavlovich Polozov, Maria Anatolyevna Bovda a.k.a. Maria Anatolyevna Belyaeva, Robert Sergeyevich Bovda, Dzheykhun Nasimi Ogly Aslanov a.k.a. Jayhoon Aslanov a.k.a. Jay Aslanov, Vadim Vladimirovich Podkopaev, Gleb Igorevich Vasilchenko, Irina Viktorovna Kaverzina, and Vladimir Venkov*, Indictment in the U.S. District Court for the District of Columbia, Case 1:18-cr-00032-DLF (16 February 2018), 1–37.
99. Andrew and Mitrokhin, *The Sword and The Shield*, 224–246.
100. U.S. Army Special Operations Command, *Little Green Men*; Charles K. Bartles, “Getting Gerasimov Right,” *Military Review* (January-February 2016): 30-37. Gerasimov’s theory has been broadly accepted by analysts as the new Russian way of war. To a lesser degree some analysts have argued that Gerasimov is not proposing a new Russian way of war, but rather he is simply describing his view of the contemporary operating environment. They argue that the model Gerasimov presents is not Russian, but is the Russian understanding for the current and active American way of war. [McDermott] Conversely, a compelling and well-supported argument that Russia actively used Gerasimov’s hybrid warfare model in Ukraine 2013-2014 has been made by the National Security Analysis Department at Johns Hopkins University. The study was sponsored and supervised by the U.S. Army Special Operations Command under a program titled *Assessing Revolutionary and Insurgent Strategy (ARIS)*.
101. Valery Gerasimov, “The Value of Science is in the Foresight: New Challenges Demand Rethinking the Forms and Methods of Carrying out Combat Operations,” *Military Review*, trans. Robert Coalson (January–February 2016): 23–29.
102. Gerasimov, “The Value of Science.”
103. U.S. Army Special Operations Command, *Little Green Men*, 1.
104. U.S. Army Special Operations Command, *Little Green Men*, 1, 14–19.
105. Graham H. Turbiville, Jr., *Russian Special Forces: Issues of Loyalty, Corruption and the Fight Against Terror* (Tampa, FL: JSOU Press, 2005), 3. [see Marsh 2010] *Spetsnaz* have a broad range of organization and capabilities from highly irregular to hyper-conventional attributes.
106. U.S. Army Special Operations Command, *Little Green Men*, 5, 58-59.

107. U.S. Army Special Operations Command, *SOF Support to Political Warfare*, 5–6; Derek Jones, *Understanding the Form, Function, and Logic of Clandestine Insurgent and Terrorist Networks: The First Step in Effective Counter-Network Operations* (Tampa, FL: Joint Special Operations University, 2012), 6, 83–86. The Iranian Quds Force is a special operations unit within the IRGC which executes the majority of Iranian regional IW. For example, during the U.S. Iraq war in 2003–2009, the Quds Force actively supported clandestine Shia militant groups against the U.S. by providing a specific improvised explosive device known as an explosively formed penetrator (EFP). These EFPs inflicted significant casualties against the U.S. and dramatically influenced the conflict.
108. U.S. Army Special Operations Command, *SOF Support to Political Warfare*, 6–7.
109. U.S. Army Special Operations Command, *SOF Support to Political Warfare*.
110. Jones, *Understanding the Form*, 6, 83–86.
111. Qiao Ling and Wang Xiangsui, *Unrestricted Warfare*, trans. Foreign Broadcast Information Service (Beijing: PLA Literature and Arts Publishing House, 1992), xvii–xviii.
112. Ling and Xiangsui, *Unrestricted Warfare*, 1–20.
113. U.S. Army Special Operations Command, *SOF Support to Political Warfare*, 5–6.
114. Roby Barrett, *Islam: Ideology and Conflict* (Tampa, FL: JSOU Press, 2014), 20. This study does not intend to misrepresent Islam as a monolithic unified nation, but recognizes that Islam has an “extremely complex political, economic, social, and cultural diversity.” A plethora of violent extremist organizations have emerged from all sects, sides, and traditions of Islam. This includes state and non-state actors, splinter groups, global Salafist jihadists, structured hierarchical state-sponsored Sunni groups, splintered cellular Sunni groups, and Pan-Islamic groups which operate inclusively and exclusively locally, regionally, and globally.
115. Barrett, *Islam*, 7.
116. Barrett, *Islam*, 7.
117. Mark Juergensmeyer, *Terror in the Mind of God: The Global Rise of Religious Violence* (Berkeley, CA: University of California Press, 2003), 148–166.
118. Juergensmeyer, *Terror in the Mind*.
119. Van Creveld, *The Transformation of War*, 158, 134–139.
120. Jones, *Understanding the Form*, xiv–xv.
121. Barrett, *Islam*, 75.
122. Van Creveld, *The Transformation of War*, 1–33, 205–212.
123. U.S. Department of Defense, JP 1 *Doctrine for the Armed Forces*, I 12–I 14.
124. United Nations, *World Populations by Year* (New York, NY: United Nations, 2017).
125. United Nations, *World Populations*.

126. Chris Brown and Kirsten Ainley, *Understanding International Relations: Fourth Edition* (New York, NY: 2005), 177–198.
127. Michael N. Schmitt and Andru E. Wall, *The International Law of Unconventional Statecraft* (Cambridge, MA: Presidents and Fellows of Harvard College, 2014), 371.
128. Jytte Klausen, “Tweeting the Jihad: Social Media Networks of Western Foreign Fighters in Syria and Iraq,” *Studies in Conflict and Terrorism*, 38:1 (2015):1–22; Jialun Qin, Jennifer J. Xu, Daning Hu, Marc Sageman, and Hsinchun Chen, “Analyzing Terrorist Networks: A Case Study of the Global Salafi Jihad Network,” *Intelligence and Security Informatics* (May 2005): 287–304.
129. Hansen, *US Nuclear Weapons*, 13–16.
130. Merriam-Webster Dictionary, 11th ed., s.v. “promotion,” 2018.
131. U.S. Army Special Operations Command, *SOF Support to Political Warfare*, 1–34; Joseph Votel, Charles T. Cleveland, Charles T. Connett, and Will Irwin, “Unconventional Warfare in the Gray Zone,” *Joint Forces Quarterly* 80 (1st Quarter 2016), 101–109; Doug Livermore, “It’s Time for Special Operations to Dump ‘Unconventional Warfare,’” *War on the Rocks* (October 2017); U.S. Central Intelligence Agency, *Prepared Remarks by Director Pompeo to Foundation for Defense of Democracies*, 19 October 2017; Max Boot and Michael Doran, “Political Warfare,” *Council on Foreign Relations Policy Innovation Memorandum* No. 33 (Washington, D.C.: Council on Foreign Relations, 7 June 2013).
132. U.S. Army Special Operations Command, *Little Green Men*, 1–67.
133. Merriam-Webster Dictionary, 11th ed., s.v. “proliferate,” 2018.
134. U.S. Special Operations Command, *2018 Fact Book* (Washington, D.C.: Government Printing Office, 2018), 30–33.
135. U.S. Department of Defense, *Report to Congress: Enhancing Security and Stability in Afghanistan* (Washington, D.C.: Government Printing Office, 2017), 1.
136. U.S. Department of Defense, *Report to Congress*, 72–75.
137. Fred Kaplan, *The Wizards of Armageddon* (Stanford, CA: Stanford University Press, 1983), 317.
138. Merriam-Webster Dictionary, 11th ed., s.v. “promulgate,” 2018.
139. Leo J. Blanken, “Slowing Down to Keep the Lead in Military Technology,” *Defence and Peace Economics*, Vol. 22, Issue 3 (June 2011), 317–334.
140. Edward J. Lawler, Rebecca S. Ford and Mary A. Blegen, “Coercive Capability in Conflict: A Test of Bilateral Deterrence versus Conflict Spiral Theory,” *Social Psychology Quarterly*, Vol. 51, No. 2 (June 1988), 93–107.
141. Richard Bissell, *Reflections of a Cold Warrior: From Yalta to the Bay of Pigs* (New Haven, CT: Yale University Press, 1996), 214.
142. John G. Breen, “The Ethics of Espionage and Covert Action: The CIA’s Rendition, Detention and Interrogation Program as a Case Study,” *Interagency Journal*, Vol. 7, Issue 2 (2016): 71–80.

143. Gregory Reichberg, Henrik Syse, and Endre Begby, eds., *The Ethics of War: Classic and Contemporary Readings* (Maiden, MA: Blackwell Publishing, 2006), 385–437.
144. Chalmers Johnson, *Blowback: The Cost and Consequences of American Empire* (New York, NY: Henry Holt and Company, 2004) 3–34.
145. Breen, “The Ethics of Espionage and Covert Action,” 72.
146. Jim Slesman, “Conducting Unconventional Warfare in Compliance with the Law Of Armed Conflict,” *Military Law Review*, Vol. 224 Issue 4 (2016), 1101–1149; Michael N. Schmitt and Andru E. Wall, *The International Law of Unconventional Statecraft* (Cambridge, MA: Presidents and Fellows of Harvard College, 2014), 349–376; Andru E. Wall, *Demystifying the Title 10-Title 50 Debate: Distinguishing Military Operations, Intelligence Activities and Covert Action* (Cambridge, MA: Presidents and Fellows of Harvard College, 2011), 88–89.
147. U.S. Central Intelligence Agency, *Remarks as Prepared for Delivery by Central Intelligence Agency Director Mike Pompeo at the Center for Strategic and International Studies*, 13 April 2017.
148. Breen, “The Ethics of Espionage and Covert Action,” 71–80.
149. General Thomas, *Posture Statement Before the Senate Armed Services Committee*, 4 May 2017.
150. George H. Anno, Gene E. McClellan, Michael A. Dore, Siegmund J. Baum, *Biological Effects of Protracted Exposure to Ionizing Radiation: Review, Analysis, and Model Development* (Los Angeles, CA: Pacific-Sierra Research Corp, 1991), 193–195.
151. Mao, *On Guerrilla Warfare*, 41-50; Johnson, *Revolutionary Change*, 147.
152. Johnson, *Revolutionary Change*, 150.
153. Johnson, *Revolutionary Change*, 148–150.
154. Stathis N. Kalyvas, *The Logic of Violence in Civil War* (Cambridge, UK: Cambridge University Press, 2006), 111–145.
155. U.S. Department of Defense, Joint Staff, JP 5-0 *Joint Planning* (Washington, D.C.: Government Printing Office, 2017), I-1.
156. Tullio Treves, “Piracy, Law of the Sea, and Use of Force: Developments off the Coast of Somalia,” *The European Journal of International Law* Vol. 20 no. 2 (2009): 399–414.
157. U.S. Department of Defense, JP 5-0 *Joint Planning*, I-1.

