In the Shadow of Deterrence: Explaining Modern Conflict Short of War¹

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Abstract: Policymakers are increasingly concerned about the "gray zone" — the region between peace and war where, it is feared, challengers are able to alter the status quo without triggering larger military confrontations. The central puzzle is really why capable aggressors intentionally limit the potency of an attack. We offer two logics for this behavior. First, to the degree that deterrence works, challengers are forced to "pull their punches," adopting sub-optimal strategies to avoid triggering a larger contest. Defenders in this scenario can respond by "doubling down" on deterrence, further containing the contest and forcing an aggressor to withdraw or continue to fight inefficiently. Second, in contrast, the challenger may not have been deterred but deliberately chose a low-cost strategy as militarily optimal. In this case, doubling down on deterrence is counter-productive and risks escalation. We test the two arguments using Russian interventions in their near abroad. We find that more overt and muscular operations are inversely correlated with the credibility of Western deterrence. Russian cyber and intelligence operations are ubiquitous. In contrast, Russian conventional operations are much rarer and are limited by fears of escalation. Concerns about the gray zone may be well founded, but one should not overstate its general efficacy.

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Introduction

In the wake of the overthrow of Ukrainian President Viktor Yanukovych in February 2014, Russian Spetsnaz (special forces) and the 810th Independent Naval Infantry Brigade occupied the Crimean Peninsula (Kofman 2017). These forces had removed their military insignia, leading to initial speculation about their identity and whether or not their actions were sanctioned by the Kremlin. The undesignated Russian forces were accompanied by local police from the Berkut public order unit and were also joined by armed local self-defense volunteers. After the dust had settled, most observers took it for granted that Russian forces had conducted the invasion with a deliberate goal of annexing Crimea. The problem of attribution in this case was far more of a political issue than an intelligence mystery. While Russia was eager to avoid direct conflict with NATO, NATO was also not inclined to intervene on Ukraine's behalf despite Russia's violation of sovereignty norms. The Russian fig leaf of anonymity provided NATO with a desired excuse not to intervene.

Russian occupation of Crimea and their subsequent incursions in Easter Ukraine prompted considerable concern in NATO and elsewhere about how to counter "gray zone conflict," threats that did not quite meet agreed upon thresholds for a coordinated military response, but which were clearly destabilizing and inimical to Western interests. Many worried that the "little green men" might reappear in the Baltics, conducting incursions that nevertheless failed to cross any explicit "red lines" that would trigger a NATO Article V response. Others have drawn parallels with China's construction of artificial islands in the South China Sea and use of maritime militias or "little blue men" to roll back the East Asian status quo (Erickson and Kennedy 2015; Green et al 2017). Use of kaleidoscopic language highlights the challenges that are as much definitional as practical. As General Joseph Dunford, Chairman of the Joint Chiefs of Staff, recently noted, "Our traditional approach is either we're at peace or at conflict. And I think that's insufficient to deal with the actors that actually seek to advance their interests while avoiding our strengths" (Dunford 2016).

There is actually nothing new about conflict that falls ambiguously between peace and war. There is a long history of, and a vast literature on, limited conflict (Lepgold and Sterling 2000, Powell 2015, Rosen 1982, Schelling 1957, Sullivan 2007), salami tactics (Fearon 1996, Freedman 2014, Schelling 1966), low intensity conflict (Freysinger 1991, Grant 1991, Metz 1989, Turbiville 2002), military operations other than war (Kinross 2004, Lin-Greenberg 2017), special operations (Johnson 1992), small wars (Olson 1990), fifth columns (Charap 2015), and proxy wars (Bar-Siman-Tov 1984, Brown 2016, Driscoll and Maliniak 2016). Many of these concepts emphasize asymmetric struggles with at least one combatant that is *unable* in practical terms to fight on a larger scale or with higher intensity. What distinguishes gray zone conflict as we use the concept here is that it features adversaries that are *unwilling* to broaden the scope or intensity of a military

engagement, despite being able to do so. Actors pull their punches in the gray zone. But this also is not a new phenomenon. General Joseph Votel et al (2016) describe the Cold War as "a 45-year-long Gray Zone struggle" in which the United States and Soviet Union conducted proxy wars, covert operations, and (dis)information campaigns against one another around the world, resulting in American victory in the absence of a larger overt (nuclear) contest. Cold War strategists advanced the notion of "the stability-instability paradox" (Snyder 1965; Jervis 1984) to explain how incentives for engaging in conflict at lower levels of intensity or in peripheral theaters arise out of disincentives for initiating major, in this case global thermonuclear, war. Much gray zone conflict deals with even lower levels of intensity that are bounded not only by the possibility of nuclear war but also by conventional war.

Modern gray zone conflict is a difference in degree rather than kind, but it appears novel largely because of *how* it is pursued. Modern technologies and economic interdependence increase both opportunities for low-intensity conflict and incentives — often mutual — for restraining that intensity (Lindsay 2017; Lindsay and Gartzke 2018). Conflict initiators have multiple elements of power at their disposal but intentionally choose to limit the scale or scope of their efforts to push back against the status quo, in no small part because they themselves favor and are enmeshed in elements of the existing international system. These challengers can exploit the technology of globalization, such as the internet, commercial satellites, the financial system, and civilian transportation networks, in addition to or in lieu of limited military force. Limited but creative provocations by a capable challenger that holds much of its military capacity in reserve reflects conflicting incentives, simultaneously challenging some aspects of the status quo and seeking to sustain others. Aggressors in the gray zone often appear eager to remain engaged in a larger, mutually beneficial set of relationships, even those involving the target and its friends and allies. For their part, defenders and their security partners typically fail to escalate conflict. Because responses to gray zone conflict are often muted, challengers may be able to revise the status quo without triggering a broader contest or other undesired consequences.

The essential puzzle, then, is why capable countries on both sides of the gray zone limit their chances of victory by leaving some of their most potent capabilities — weapons they might normally be expected to wield on the battlefield — at home. There are at least two reasons why this might be so. The first is that challengers may be deterred from engaging in general war by the explicit threats or implicit posture of defenders and their allies, choosing instead to adopt militarily sub-optimal strategies, settling for doing something rather than nothing. The second possibility is that the challenger may believe that limited means are optimal for accomplishing its strategic objectives. In the first case, a defender might be able to improve strategic stability by clarifying and intensifying its deterrence posture, in effect making even the challenger's second-best option look less attractive. In

the second case, by contrast, further pressure from the defender will likely encourage the challenger to expand the means it assesses to be optimal, leading in some cases to explicit deterrence failure and further challenging the defender's interests. It is thus imperative for the defender to discern not only *that* a challenger is making a challenge in the gray zone but also *why*.

We proceed in four parts. First we summarize existing policy and academic understandings of gray zone conflict. Second we introduce a new definition of gray zone conflict framed through the lens of deterrence theory that differentiates it from other forms of 21^{st} century combat and explains the importance of understanding the motivation driving gray zone conflict. Third we probe the plausibility of this theory by examining recent Russian foreign interventions that have featured significant reliance on cyber operations, which can be conceived either as a "second best" reaction to Western deterrence posture or as an efficient tool of Russian influence. Finally, we conclude with implications of our argument.

Between Peace and War

We often think of peace and war as dichotomous and discrete, but of course many kinds of tension and violence exist on a spectrum between them (Lebow 2010). The fact that peace and war are legal categories further complicates this matter; "lawfare" features prominently in Chinese attempts to gain acceptance for its sovereignty claims in the South China Sea. The language around gray zone conflict may be new, but actors have been competing in the space between peace and war for millenia. The proliferation of terminology — gray zone conflict, hybrid warfare, irregular warfare, non-linear warfare, limited war, or guerrilla geopolitics — demonstrates a lack of consistency on both the defining features of this phenomena and its implications. This section begins with a review of the literature on limited war to highlight historical precedents and differences in thinking. We then characterize the pessimism concerning gray zone conflict that dominates contemporary policy discourse. Lastly we discuss how these ideas are influencing U.S. military doctrine.

Historical Conceptions of Limited War

The Cold War featured three distinct threads of thought dealing with limited war. The first concerned aggressive peacetime competition with the Soviet Union, especially regarding intelligence. The second concerned the conduct of conventional war in the shadow of nuclear weapons, exemplified by the Korean War but carried on in ruminations about the defense of Europe. The third concerned guerilla warfare or low-intensity conflict conducted by, with, and through irregular forces, as practiced in the jungles of Southeast Asia and Central America. Intellectual attention to each theme waxed and waned

depending on contemporaneous events. After the Cold War, only the third of these received any renewed attention, especially after the United States found itself engaged in Afghanistan and Iraq and practitioners began to dust off old texts looking for lessons about counterinsurgency. The novelty of gray zone conflict today, involving capable near-peer competitors exploiting new intelligence capabilities, in many ways represents a return to the earlier two themes.

In a 1948 memorandum, George Kennan (FRUS 1996, Doc 269) emphasized that both overt and covert political warfare played a role in the defense of the British Empire and could also do so for the United States in its long term strategic competition with the Soviet Union.

Political warfare is the logical application of Clausewitz's doctrine in time of peace. In broadest definition, political warfare is the employment of all the means at a nation's command, short of war, to achieve its national objectives. Such operations are both overt and covert. They range from such overt actions as political alliances, economic measures..., and "white" propaganda to such covert operations as clandestine support of "friendly" foreign elements, "black" psychological warfare and even encouragement of underground resistance in hostile states.

This way of thinking about warfare as being more about political objectives and less about military operations represented the key shift in thinking about limited war. Osgood (1969) argues that limited wars were limited not because of capability, but because of policy. The Korean War led to the realization that while the objective of military action used to be the destruction of the enemy's capacity and will to fight, the objective had shifted to achieving political ends short of traditional military victory (Wagner 2000). This understanding of war as limited by political objectives rather than material ends orients the contemporary debate about gray zone conflict. Even at this time, limited war was understood as occurring when actors had the capacity to increase their commitment but did not want to do so (Kissinger 1957). Limited war was seen as beneficial because it added a third option short of major war and beyond acquiescence (Kissinger 1955, Brodie 1957). Difficulties inherent in maintaining this third option were also recognized, however. Mutual recognition of limits to conflict must be known and communicated by both sides — a costly endeavor given the benefits of appearing more resolute (Schelling 1957). The debate over US strategy during the Vietnam War reflected this challenge as well as the importance of resolve. Although China and the Soviet Union limited their involvement, the North Vietnamese were prepared to push beyond the limits of limited war (Carver 1986). Limited wars also lend themselves to certain domains (the sea) where states' objectives are more constrained (Corbett 1911).

Conflict short of full-scale war also garnered attention in the late 1970s under the rubric of "low intensity conflict" (LIC) (Schultz 1986). Opinions on what exactly differentiates LIC

from conventional war differ. In some cases, definitions and analytical attention focus on means (Adams 1990; Kornbluh and Hackel 1986). Alternatively, LIC can be characterized by actors (Downie 1992; Kinross 2004). One commonality among these examples is a focus on strategies of the weak used against the strong; thus the association between LIC and resource poor regions (Kornbluh and Hackel 1986; Kober 2002; Hammond 1990). For some, definitions that try to explain new or innovative forms of conflict like separatist movements, state-sponsored insurgency, insurrection or unconventional warfare, have become so broad as to be virtually unlimited and analytically unhelpful (Schultz 1986; Hammond 1990). For others, LIC is not really distinct conceptually from war (Hammond 1990; Kober 2002). Low-intensity conflict is "low" for outsiders, but high in salience, cost, and consequence for insiders. Intensity is thus subjective or relative (Kinross 2004).

Snyder described the importance of limited war and escalation long before gray zone conflict existed conceptually. "[N]uclear technology introduced a new form of intent-perception and a new form of uncertainty — that concerning what types of military capability the opponent was likely to use and what degree of violence he was willing to risk or accept" (Snyder 1967). This view is widely credited with originating discussion of the stability-instability paradox regarding the relationship between capabilities an actor possesses and the capabilities they use. Because nations fear escalation in the nuclear era, the high risk of nuclear exchange at higher conflict intensities discourages major war.

The resulting debate created competing perspectives on escalation, characterized as deterrence and the spiral model. Snyder's deterrence perspective contrasts with the spiral model advocated by Jervis (1984). Hart (1954), similarly argued for indirect approaches to conflict because of the strategic benefits that come from "weakening the enemy with pricks instead of blows." However, Hart noted a downside to this approach in the nuclear era. While the presence of nuclear weapons might prevent world war, it could simultaneously encourage local aggression and smaller conflicts (Sagan and Waltz 2003, Kapur 2007, Russell 2003). Modern elaborations of the stability-instability paradox seek to analyze the situation quantitatively (Rauchhaus 2009) or in specific contexts, like India and Pakistan (Ganguly 1995, Raghavan 2001). Powell (2015) critiques stability-instability because the theory and practice are out of sync. He develops a formal model of the stability-instability paradox based on the correlation and the trade-off between power and risk (Powell 2015).

This paper resolves some of the problems identified by Powell (2015) by applying a deterrence-oriented explanation for gray zone conflict. We argue that gray zone conflict occurs when opponents mutually prefer low-intensity conflict to high intensity conflict. This can happen when the initiator believes it can achieve its objectives at a lower intensity and cost than high intensity conflict, meaning gray zone conflict appears efficient. The gray zone can also be preferred when the target has raised the cost of high intensity conflict to

an unacceptable level for the initiator, meaning the initiator is deterred. A capable actor chooses to fight at lower intensity either because this is the cheapest arena where victory is likely or because deterrence has forced it to take high intensity conflict off the table.

Pessimistic Views of Gray Zone Conflict

A study by the Center for Strategic and International Security defines gray zone conflict as a strategy "beyond steady state deterrence and assurance that attempts to achieve one's security objectives without resort to direct and sizable use of force. In engaging in a gray zone strategy, an actor seeks to avoid crossing a threshold that results in war" (Green et al 2017). Gray zone conflict is said to occur when challengers are dissatisfied with the status quo and when they perceive the defender to enjoy advantages at higher levels of escalation.

The United States Special Operations Command (SOCOM) definition, as was updated in July 2017 (Bragg 2017), offers five primary components. The gray zone is defined as:

- 1. a conceptual space between peace and war,
- 2. occurring when actors purposefully use single or multiple elements of power to achieve political-security objectives
- 3. with activities that are typically ambiguous or cloud attribution
- 4. and exceed the threshold of ordinary competition, yet intentionally fall below the level of large-scale direct military conflict,
- 5. and threaten US and allied interests by challenging, undermining, or violating international customs, norms, or laws.

Amidst evolving definitions, a recurring dilemma for policy makers has been whether and how to respond to gray zone aggression. Ambiguity in cases like disguising communist instructors from Cuba in Nicaragua or hiding construction of a Soviet airbase in Grenada increases this difficulty. Conversely, the desire to respond remains lest others see America as impotent or apathetic. Former Secretary of State Schultz noted that the United States needed an active strategy to counter ambiguous warfare that made it unambiguously clear America would fight back (Schultz 1986). The current US response to gray zone conflict, focused primarily on Russia, can be decomposed into three parts. The first involves countering misinformation campaigns like Russia's "firehose of falsehood" that bombards the public with false information (Paul and Matthews 2016). The second US effort emphasizes adaptation to risk sensitivity (Maxwell 2016). Lastly, non-military means of coercion, deterrence, weakening, and punishment are advocated because gray zone conflict is perceived to be immune to traditional military responses and soft power tactics. These

non-military mens include sanctions, support for non-violent opposition to hostile regimes, cyber operations, energy independence, and monitoring of financial assets (Galeotti 2016).

While the policy community has come around on the idea that gray zone conflict is not new, academic international relations has only begun to investigate this form of conflict.² Russian activities in Ukraine are described as a strategy of hybrid warfare that occurs when the belligerent has escalation dominance and revisionist aims (Lanoszka 2016, Marten 2015, Thomas 2015). Outside of the Ukranian context, broader concerns about Russian gray zone activities paint a pessimistic picture, arguing that Russia's declining military power and new, cheaper forms of warfare will sponsor increased Russian aggression against NATO and the West (Charap 2015). This view generally argues that states can deploy gray zone tactics strategically to work around their adversaries' red lines to achieve coercive bargaining success without triggering escalation (Altman 2017, Jackson 2017, Lin-Greenberg 2017).

The only reference to a silver lining in the gray zone we have come across appears in a January 15th, 1986 speech at the Pentagon by Secretary of State George Shultz:

The ironic fact is, these new and elusive challenges have proliferated, in part, because of our success in deterring nuclear and conventional war. Our adversaries know they cannot prevail against us in either type of war. So they have done the logical thing: they have turned to other methods. Low-intensity warfare is their answer to our conventional and nuclear strength a flanking maneuver, in military terms. They hope that the legal and moral complexities of these kinds of challenges will ensure us in our own scruples and exploit our humane inhibitions against applying force to defend our interests" (Schultz 1986).

Gray zone conflict is often thought of as something that is unique in terms of its intensity. But the intensity of conflict itself is by no means a novel feature. Lower intensity conflict has existed for as long as conflict itself. Rather, the relevant issue, we believe, is how lower intensity conflict has been used in recent years, and by whom. States that could fight "big" have chosen not to do so, instead going into battle while many of their nominal capabilities remain at home. Thus the central question of gray zone conflict is *why*? Even when analysts recognize that lower intensity conflict is not novel, they tend to highlight the expanded repertoire of military strategies available to political actors, rather than emphasizing the central role of self-imposed limitations in how (and how much) nations bring to the fight.

 $^{^{2}}$ Comparative politics scholars have focused on civil wars where actors face limited means rather than ends

A Theory of Gray Zone Conflict

Limited War Versus Gray Zone Conflict

We present a new conceptualization of gray zone conflict that departs from existing perspectives (such as the SOCOM definition) in several ways. *Gray zone conflict occurs when militarily capable conflict initiators intentionally limit the intensity and capacity with which they conduct military or intelligence operations and the target either does not or cannot escalate the contest.* Our definition reflects the empirical reality of an overlap with other concepts, such as low intensity conflict and limited war, while at the same time emphasizing unique attributes of conflict in the gray zone. Initiators can intentionally limit the intensity of a contest either because they deem it optimal in terms of the intrinsic tradeoff between the costs imposed by the magnitude of the initiator's conflict effort and the probability of victory, or because the initiator anticipates that fighting at lower intensity is necessary to avoid triggering an unwanted escalatory response on the part of the target or a third party. Stated simply, gray zone actors are motivated either by efficiency criteria or by effective deterrence.³

Three important aspects of this definition are worth highlighting. First, gray zone conflict involves *capable initiators*. This differentiates activities that Russia or the United States undertake from actions taken by insurgent groups, for instance, even in cases where they look observationally similar. In the case of the former, the United States may choose certain limited actions despite the fact that it is capable of doing more. In the case of insurgent groups, they use limited tactics precisely because that is all they are capable of doing. The relationship between the extent of the capabilities utilized and the potential capabilities that an actor could have utilized limits gray zone conflict to a strategy for relatively strong actors, one in which the initiators of contests are pulling their punches rather than not possessing much of a punch in the first place. Table 1 distinguishes different motivations and constraints leading actors to engage in various types of limited-means operations.

Second, it follows that gray zone conflict results from agency rather than necessity. It is *limitation by choice*. This differs from conventional understandings of "hybrid warfare" that describe a "whole-of-government" approach that combines multiple political and military capabilities — such as information warfare — to compensate for conventional military weakness (Chivvis 2017). Gray zone conflict, in contrast, is not limited by a capability constraint but rather is a policy choice by capable actors that have intentionally self-limited

³ In essence, these two conditions reflect concepts of internal or corner solutions in optimization theory. Deterrence is designed to proscribe a choice set, making certain options no longer tenable. This forces some actors away from their ideal action. In contrast, even unconstrained actors will often choose moderate policies, especially if they deem these actions adequate to achieve their objectives in a manner that is most efficient.

the intensity of a conflict, either because they expect to win or because they fear escalation. The key issue is initiator motivation; actors are limited by their ends as opposed to means.

Third, gray zone conflict must be *mutually preferred* by both sides in a contest. This insight initially seems counterintuitive, given the rhetoric surrounding discussions of appropriate US responses to gray zone provocations. However, by its nature gray zone conflict involves a situation where both sides can escalate, but neither side chooses to do so. As such, gray zone contests represent a Nash equilibrium since neither side has an incentive to deviate from the limited contest. For the initiator, gray zone conflict is preferred to a larger contest, either out of fear of retaliation, or because gray zone conflict is believed to be a more efficient means of achieving the initiator's desired objective. For the target, gray zone conflict is not desired, but may be tolerated, again either because it deems a limited contest optimal militarily or because it is not willing to escalate given the nature of the dispute. The target would rather have the opponent engage in gray zone conflict than engage in overt warfare as a result of the target's own reaction to the gray zone provocation. In a conventional conflict, at least one side is willing to escalate and there is no mutually agreed upon ceiling of escalation. This difference occurs because during gray zone conflict thre attacker select technologies that deliberately obfuscate their intention or complicate attribution precisely because doing so avoids traditional conflict and all its attendant costs. The decision to obfuscate attribution, moreover, is often done for the benefit of the target, to relieve it of the obligation to respond forcefully to a provocation, rather than for the benefit of the initiator, to enable it to escape retaliation. Conventional wisdom holds that actors adopt these tactics because it gives them plausible deniability. However, it may be more accurate to describe the tactic as having "implausible deniability" (Cormac and Aldrich 2018). There was never any real confusion about who was responsible for the "little green men" in Crimea, but the initial lack of consensus about whether Russia's actions violated international law created a pretext that enabled western powers to both uphold international law in principle and avoid any major action in practice. Cold War covert action, similarly, was often an open secret between the United States and the Soviet Union that enabled both sides to compete in limited ways without openly escalating contests because of public demands for action (Carson 2015, Carnegie and Carson 2018).

Table 1: Actor's Conflict Typology

		Ends				
		Concessions	Conquest			
Available Means	Few	Limited War	Revolutionary War			

Many	Gray Zone	Traditional		
	Conflict			

These three components of gray zone conflict differentiate it from other forms of conflict. This refined definition also omits the extraneous notion of ambiguity and the misleading interpretation of international norms Gray zone conflict uses, reinforces, and advances norms. According to conventional wisdom, gray zone conflict can challenge international norms while stopping short of clear violations (China's "little blue men") or employ violations that intentionally avoid penalties (Russia's "little green men") (Gady 2015). However, gray zone conflict is as much about promoting as violating norms, suggesting a dynamic in sharp contrast to current characterizations. At the low end, initiators of gray zone conflict seek to avoid escalation, triggering an undesired reaction by the target. To do so, initiators must approximate compliance with elements of international law that are likely to act as "tripwires," prompting a more vigorous reaction from the international community. At the high end, aggressors in gray zone conflicts are dependent on the eventual acquiescence of the international community to their preferred states of the world, relying on norms and conventions to cement changes in place. Here we emphasize the advantages of conducting "lawfare"; precisely because they lack the will or interest to exercise overt, robust military power, practitioners in the gray zone must exercise international law or norms to ensure their objectives are lasting and stable.

This definition also adds the idea that actors with multiple options can prefer to intentionally limit engagements to remain within the realm of low-intensity conflict. In this way, gray zone conflict can be understood in the context of political objectives rather than military technologies, or ends rather than means. The conventional idea that gray zone conflict is the purposeful use of single or multiple elements of power does not help distinguish it from other forms of conflict. States' political-security objectives are generally pursued through more than just one element of power. Gray zone conflict is not the added deployment of non-military tools like political, economic, informational, or humanitarian means. Instead, a unique feature of gray zone conflict is that it typically uses *fewer* elements of power than more conventional contests. Table 1 shows that what differentiates the gray zone from other forms of conflict is the use of limited intensity as a strategy, not a material necessity. Contrary to previous attempts to conceptualize different forms of conflict, the political objectives of the actor are not what matter. Rather, it's about how a state accomplishes its goals, given the scope of these objectives. Gray zone conflict means that less of a state's portfolio of "tools" for conflict are exercised, not more.

If gray zone conflict is to be defined as political conflict between peace and war, an important task is demarcating where peace ends and gray zone conflict begins as well as where gray zone conflict ends and conventional conflict begins. The gray zone is different from peace because it is directed military or political maneuvering that is designed to change the status quo. By directed, we mean political/military maneuvering that has another international actor in mind as opposed to military actions that occur in peacetime like weapons testing or modernization. An important difference between ordinary competition and gray zone conflict is the manner in which it is resolved. When states compete peacefully, competition is typically resolved through institutional or legal mechanisms as opposed to through conflict. Gray zone conflict is distinct from conventional conflict because it occurs when an initiator is unwilling to escalate the conflict and the target either does not or cannot escalate the contest.

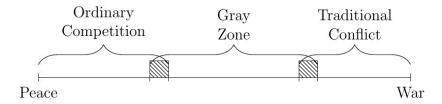


Figure 1: Model of Conflict

Schelling (1966) argues that "the main consequence of limited war, and potentially a main purpose for engaging in it, is to raise the risk of larger war." Our theory presents a different relationship between limited war and larger contests. Instead, a capable actor may choose to engage in limited war to *lower* the risk of larger war (Schram 2018). As Powell states, "the amount of power the challenger brings to bear affects the stability of the conflict. More specifically, how much power the challenger brings to bear limits how much risk the defender can generate" (Powell 2015). Where we expand upon Powell's model is in his conceptualization of the military might used by the challenger. Powell defines different values of military might (*p*) as different types or levels of conflict which leads him to the conclusion that the way states fight and the level of violence at which they fight affects the risk of all-out war (Powell 2015).

Our discussion of gray zone conflict thus far has been dyadic, but the role of third parties deserves clarification. The target's allies can be considered as part of the target's capability if the initiator believes that the target's allies will treat an attack on the target as an act that also threatens their interests. No doubt, Russia's decision to engage in cyber attacks against Estonia involved a calculation about a possible NATO response in addition to the response from Estonia itself. Thinking of allies as a component of the target actor's power, discounted by the probability they intervene, allows that more targets are "capable," given

protection from others. Importantly, deterrence will often be an implicit function of alliance membership and capability rather than declaratory policy. The latter draws a bright line between peace and war, but the former is more inherently ambiguous, which is closely tied to gray zone provocation. Deterrence works if an ally might respond to a given provocation, but gray zone conflict occurs nonetheless precisely because an ally might not intervene. Thus, the existence of a powerful ally that could intervene to protect a target can push cases that would have been limited war to cases of gray zone conflict because this prospect of allied intervention is how deterrence creates a scaling effect on the intensity of the conflict.

Similarly, a gray zone initiator is in a challenging position if its gray zone strategy entails reliance on proxy actors. On the one hand, proxies carry the benefit of allowing the initiator to claim it was not responsible for the attack. This ambiguity regarding the attribution of responsibility for an attack makes a retaliatory response less likely, especially if the target is looking for reasons not to retaliate. On the other hand, without deliberate efforts at attribution, coercion becomes more difficult. How is the target to know what conditions must be fulfilled for compliance, and be reassured about the consequences of compliance, if attributional ambiguity undermines the credibility of the initiator's coercive commitment? In telegraphing limited intentions to the target, moreover, thereby clarifying that the initiator intends to remain in the gray zone, the initiator is also telegraphing limited intentions to its proxies, which could backfire if those proxies then choose not to fight.

Deterrence vs. Efficiency

One of the first observations made about gray zone conflict was the uniqueness of its intensity, but even a brief review of history demonstrates that this is not especially novel. Cases like Russian "little green men" in Crimea are explained as initiators working around opponents' red lines by "advancing without attacking" to achieve objectives without using force (Altman 2017). The issue then is why capable actors choose to pull their punches and pursue gray zone conflict. As we have characterized it, gray zone conflict is a choice by actors who are not limited by means, but by ends. Our theory helps explain the strategy and motivation for such an action. Here we present two explanations, deterrence and efficiency.

Product of Deterrence

Gray zone conflict may be the product of prior deterrence successes. Initiators in the gray zone may pull their military punches — enduring a contest that they can prosecute only in a non-optimal manner — because the alternative risks escalation, such as drawing in additional adversaries that increase the cost of fighting beyond acceptable levels. Initiators in these circumstances are not choosing to fight as they prefer but are instead deterred from "optimal" modes of conflict. This type of gray zone conflict is thus best thought of as "war with inhibitions." The initiator's strategy is a compromise between what it does best

militarily and what it fears will happen if it adopts its optimal battlefield strategy and tactics. As a result, the initiator cannot expect to perform especially well on the battlefield, as their fear of escalation has dissuaded them from implementing a more effective strategy. These actors make compromises from what they would do in an unconstrained environment in order to avoid triggering escalatory responses from targets and their allies.

There are in turn two basic reasons that this might occur (both can exist simultaneously). First, an adversary may possess benefits that would be endangered by escalation to higher conflict intensity or scope. Globalization and associated economic interdependencies create collective incentives to avoid large conflicts that would disrupt commerce. More broadly, changes in the material basis of military and economic power have increased both the incentives and opportunities for ambiguous gray zone aggression in several ways. The cost of major war has increased because better military technology has made conflict more lethal. Many have argued that deterrence has been a cause of peace but in reality it may be a cause of the absence of high intensity war meaning it leaves open the possibility of gray zone conflict (Rauchhaus 2009). Peace is also increasingly beneficial as improvements in communication and global trade lead to greater interdependence. While overt military combat has declined, covert and intelligence operations have arguably increased. As a result, state interests have been regularized and issues that used to cause war no longer as international institutions and globalization provides forums for peaceful dispute resolution.

While the effects of interdependence on peace are not new, the role of globalization in shaping the type or *intensity* of conflicts, rather than deterring all contests outright, seems especially germane to the origins of gray zone warfare (Gartzke and Li 2003; Gartzke and Westerwinter 2016). Traditional conflict comes with a fear of losing out on the benefits of cooperation from ordinary competition. This occurs despite the fact that traditional conflict can often better achieve a nation's objectives than ordinary competition. Since one factor that differentiates gray zone conflict from traditional conflict is the response by the defender, gray zone conflict has an added benefit over traditional conflict in being less likely to trigger a loss of cooperation between those actors. Russia, for example, clearly hoped that incursion into Ukraine would not prevent it from supplying Europe's energy needs, even as Europe feared that a vigorous response would endanger access to Russian natural gas. The causes of peace in the 21^{st} century — in particular increased interdependence — are being exploited in ways designed to claw back some of the effects of deterrence. The benefits to peace provide new ways to hassle target states. This special function of gray zone conflict explains its novelty, even though conflict short of war is not iself new. Indeed, we are left with the uncomfortable conclusion that these new institutional causes of peace are a principle facilitator of gray zone conflict; the fear of losing the fruits of cooperation creates mutual incentives to favor gray zone conflict over more intense forms of conflict.

If interdependence is a "carrot" encouraging discreet aggression, then deterrence is the "stick" that makes it costly for an aggressor to go too far. If an initiator intentionally chooses to limit an engagement, this could represent not a "new way of war," but instead simply an adversary attempting to avoid triggering escalation. Ukraine is a commonly misunderstood example. Here, the target and/or its allies (Ukraine and NATO) have escalation dominance. Russia would most likely lose a conventional conflict involving NATO. The risk of triggering a robust NATO reaction has mitigated against more overt use of Russian military power in Eastern Ukraine. The fear on both sides of possible NATO involvement arguably led to circumspection in the Russian approach to intervention. When Malaysian Airlines flight MH17 was shot down over Donetsk by a Russian BUK anti-aircraft missile, Moscow quickly withdrew its heavy weapons from the battlefield. The presence of gray zone conflict in Ukraine reflects significant NATO deterrence success at higher levels of conflict intensity.

The gray zone thus functions in an area below the threshold created by deterrent threats or economic interdependence. While not completely novel, the gray zone has grown in relevance with the expanding benefits to peace and increasingly prohibitive cost of war. Competition is bounded by incentives to cooperate (interdependence) and coordinate (deterrence). Adversaries no longer possess monolithic interests, preferring to compete around the edges, rather than openly confront opponents in a manner that maximizes military power, but also undermines larger political objectives. Aggression among mutually constrained actors is pursued furtively, so as to protect their broader compatible goals.

One implication of this perspective is that raising the cost of gray zone conflict can cause the initiator to cease or refrain from acting aggressively, due to the risk of escalation. In a world where gray zone strategy has been chosen because of a fear of escalation, then tying gray zone conflict to escalation or a retaliatory response should cause an initiator to think twice.

Product of Efficient Warfare

If the first explanation for gray zone conflict involves inherent tensions between the use of force and its consequences, the second argument requires no such contrast. Initiators (and their targets) may have decided that pulling one's military punches is, in fact, optimal. A challenger that is patient and capable relative to its adversaries at low intensities could benefit by choosing a gray zone strategy. Big contests are costly and may not improve one's prospects for victory, especially if a limited contest poses advantages in terms of an initiator's force structure or force posture. While high intensity conflict may accomplish an

aggressor's goals, it may also be unnecessary and inefficient if victory can be achieved at lower levels of dispute intensity (Altman 2017). Since the 1990s, Russia has had only a limited ability to field and sustain main force units abroad, especially against an adversary with capable tactical air power. A major upgrade of Ukrainian military capabilities by Western powers would force Russia into a long and costly war of attrition. Better to fight a long and relatively cheap war of attrition, one that Moscow may be optimistic it will win. If fighting with a low profile reduces the chances that a third party intervenes, a modest effort can actually increase one's probability of victory. Fighting small can also be advantageous for even a large disputant, if the disputant possess smaller units of highly specialized forces.

Gray zone tactics are generally viewed pessimistically in the West. Gray zone conflict is seen as a dangerous new approach assumed to be available only to adversaries and thus inherently threatening. Gray zone conflict has been described as "a carefully planned campaign operating in the space between traditional diplomacy and overt military aggression" employed by states with grand geopolitical ambitions (Mazarr 2015). This pessimism has even led some to advocate revamping deterrence to focus on threats from the gray zone (Santoro and Blosserman 2016; Foust 2016; Jackson 2016). Yet, NATO and US deterrence policy has arguably succeeded in keeping more overt forms of aggression in check. Paying attention to why a challenger has chosen gray zone conflict is not only useful, but it also emphasizes that the gray zone is available *to both sides*. A neutral theoretical approach thus implies unexpected advantages in gray zone conflict; the very fact that an adversary is engaging in limited conflict suggests vulnerabilities and opportunities..

This efficiency scenario carries the opposite policy implication from the deterrence case. If the initiator chose gray zone conflict because it is a lower-cost means to achieving their goals, then raising the cost of gray zone conflict risks encouraging the initiator to escalate. This may, in fact, be desirable for the target. Assuming that gray zone conflict is not optimal for the target, the target can exploit the escalation effect of inefficient warfare by raising the cost of gray zone conflict, thus preventing the initiator from being able to exploit its low cost means of achieving their goals. In essence, by raising the cost of gray zone conflict, the target can force the initiator into fighting inefficiently, but only by also accepting higher costs and a larger level of involvement themselves, something that may be mutually unappealing.

⁴ As the risk of NATO involvement in Ukraine increased, Russian officials laid heavy hints of their willingness to deploy tactical nuclear weapons. The Russian doctrine of "escalate to de-escalate" is designed to allow Russia to maintain its conventional advantage against local opponents, while deterring NATO.

Importance of Contrasting Motivations

Understanding why these two logics of motivation make contrasting predictions about the consequences of dissuading gray zone conflict requires comparing the options available to the initiator (Schram 2018). An actor wishing to change the balance of power can do so through ordinary (peaceful) competition, gray zone conflict, or traditional conflict. Each strategy differs in terms of its ability to alter the balance of power as well as its costs.

An actor undertakes gray zone conflict when the expected benefits of doing so exceeds the expected payoffs for ordinary competition and traditional conflict. In other words, it's the most preferred choice. Thus, we can infer the following two possible preference orderings:

Gray zone ≥ Ordinary competition ≥ High intensity conflict

Gray zone ≥ High intensity conflict ≥ Ordinary competition

These respective preference orderings help to explain the importance of understanding the motivation behind gray zone conflict. The first is an example of gray zone conflict motivated by deterrence. Traditional conflict or other related consequences (sanctions, etc.) of using overt force are sufficiently costly that the initiator has been deterred from pursuing this option. If the initiator migrates away from the gray zone, it will most likely be to its second choice strategy, ordinary (peaceful) competition. The second preference ordering is an example of gray zone conflict motivated by efficiency; the initiator would have been willing to go to war to achieve their desired objective, but gray zone conflict represented a way to acquire their objective without incurring unnecessary costs. Displacing initiators with this preference ordering will tend to lead the initiator to escalate, rather than to back down.

This point clarifies why raising the cost of gray zone conflict discourages escalation in some cases while encouraging it in others. Raising the cost of gray zone conflict when it is motivated by deterrence discourages escalation since the threat of retaliation invokes the very costs that the initiator is hoping to avoid. When motivated by efficiency concerns, however, the initiator has already decided that the expected gains from traditional conflict exceed the benefits of peaceful competition. Thus, raising the cost of gray zone conflict simply makes the gray zone less efficient, encouraging a move to high intensity conflict.

The effectiveness of gray zone conflict also depends on the extent to which a state's objectives are amenable to strategies of punishment or conquest/denial. Objectives that can be imposed autonomously, such as capturing/retaining territory, ejecting/protecting populations or assisting/defeating rebels are amenable to gray zone conflict. If, however, a state hopes to coerce another state into changing its behavior, then gray zone conflict is not appropriate. Punishment strategies involve the active participation of a target; states use

punishment because they cannot, or do not wish to, impose outcomes themselves. Gray zone conflict hinges on limiting the reaction of the target. If the objective in a conflict requires the active cooperation of the target, then this will tend to work at cross purposes with the desire to limit reactions from the target. Thus, foreign policy goals that require coercion (changing/retaining a country's foreign policy, altering/maintaining its leadership, accepting/rejecting initiatives) are not best achieved through operations in the gray zone.

How Deterrence Shapes the Portfolio of Means Employed

A key implication of our argument is thus that gray zone operations are a consequence of deterrence success. If deterrence is to keep up with these challenges, it must continue to adapt as well. In a sense, deterrence is little more than a strategy to buy time against an adversary that is strongly committed to changing the status quo (George and Smoke 1989). While not explicitly framed in terms of gray zone conflict, George and Smoke raise the issue of "designing around" deterrence (1974). Adversaries can consider the option that "offers an opportunity for gain while minimizing the risk of an unwanted response by the defender" (George and Smoke 1989). George and Smoke describe this as a deterrence failure, an argument motivated by analysis of the 1973 war in which Egypt "designed around" Israel's deterrent capability (Stein 1989). As we note here "designing around" deterrence through the initiation of gray zone conflict actually reflects deterrence success.

Others share our perspective. Lieberman (2012) argues that "designing around" is a sign of successful deterrence because an adversary has shaped its challenge in response to the anticipated reaction of the defender. While nominal consensus suggests continuity of behavior, implying that gray zone is nothing new, difference may also be reflected in an evolution in what deterrents gray zone conflict is "designing around." While previous actions by adversaries were designed around *immediate* deterrence, gray zone conflict appears to represent attempts by actors to challenge and compromise *general* deterrence.

While gray zone conflict is thought of as a reduction in the *intensity* of fighting it often entails a shift in the *type* of fighting as well -- a shift to a different domain. New domains like cyber and space are among the most common examples of gray zone conflict and they represent a change in the intensity of conflict as well as the type. But the intensity and type of fighting are not synonymous, nor should they be grouped together. The conflation of conflicts intensity and conflict type helps explain concerns in the United States about how to deal with a reduced effort on the part of the attacker. Resource allocation is a metric of intensity. As such, Russia may perceive a shift to the cyber domain as a reduction in the intensity of conflict because the resources allocated to conflict are reduced. However, the United States may perceive this as an increase in the intensity of conflict because the type

of conflict is a new domain where defense capabilities are weaker and credible retaliatory threats are unknown. If a country does not have an appropriate, same-domain, and proportional response to a type of attack then its use may result in the horns of strategic dilemma even if the initiator does not realize it. The US' delayed reaction to Russian election hacking can be, in part, explained by confusion over the appropriate non-kinetic respond to a non-kinetic attack. For many gray zone operations, this is precisely the point. Gray zone conflict paralyzes one's opponent because they don't know how to react to a novel lower level of escalation in a space opened up by the causes of peace which is the argument made with the horns of the strategic dilemma (Maxwell 2016). In brief, gray zone conflicts characterized by operations in a new domain may be interpreted by the attacker as de-escalatory but by the defender as escalatory; the former thinking about the intensity of fighting with the latter thinking about its type. This demonstrates the value in understanding the logic undergirding a state's decision to strategically employ certain domains in a conflict as oppose to others (Gartzke and Lindsay, forthcoming).

Alternative Explanations

Early theories of limited war that focus on the relationship between the capabilities an actor possesses and those they use could provide alternate explanations for the motivation behind gray zone conflict. These can be discussed as two categories; the first concern theories about limited war and the relationship between objectives and capabilities and the second concern the stability-instability paradox.

Theories about limited war's relationship between capabilities and objectives diverge. The more modern iterations that focus on low-intensity conflict in resource poor regions argues that actors use limited capabilities because they possess limited capabilities (Adams 1990, Kornbluh and Hackel 1986, Downie 1992, Kinross 2004, Kober 1992, Hammond 1990). The contrasting perspective, which characterized the Cold War, is that actors use limited capabilities because they have limited political objectives and policy ends (Osgood 1969, Wagner 2000, Corbett 1911). Either of these could theoretically explain modern iterations of states limiting the potency of their attacks, as Russia has done in Eastern Europe.

The second set of theories share the assumptions of the stability-instability paradox that high risk at high levels of conflict disincentivizes low-level conflict (Snyder 1967). Where these theories diverge is their expectations on how that influences state behavior for conflict initiation using limited capabilities. The deterrence model would hold that states use limited capabilities because a higher level of conflict risks escalation (Powell 2015, Schram 2018). In contrast, the spiral model would argue that limited capabilities can be strategically successful precisely because they risk escalation and thus constrain the actions of one's opponents (Hart 1954, Sagan and Waltz 2003, Kapur 2007, Russell 2003).

Our theory offers a different explanation than those presented because while the former pits limited means versus limited ends and the latter pits deterrence versus the spiral model of conflict, we instead argue that the motivations behind gray zone conflict are not captured by either dichotomy. Rather, gray zone conflict is sometimes motivated by limited ends that can be achieved efficiently and other times it is motivated by deterrence. This differentiates our approach from the theories that emerged from discussion of limited war and adds insight to the stability-instability paradox.

Examination of Russian Gray Zone Campaigns

This paper seeks to better understand what type of military capability a country chooses and what degree of violence they are willing to risk by looking at cases where a capable actor chooses a type of military capability that is less than the options they have available. As a plausibility probe of our theory that gray zone conflict is a policy choice by capable actors motivated by either the target's successful deterrence or the possibility of more efficiently achieving one's objectives, this paper employs a comparative case study method focused on Russian cyber attacks on NATO countries. On this topic, the British Secretary of State for Defence noted "That is not a Cold War. It is a grey war. Permanently teetering on the edge of outright hostility. Persistently hovering around the threshold of what we would normally consider acts of war" (Fallon 2017). These cases are chosen because they are often referenced as paradigmatic and salient examples of gray zone conflict (Chivvis 2017, Driscoll and Maliniak 2016, Freedman 2014, Lanoszka 2016, Marten 2015). They also provide an opportunity to conduct a natural controlled comparison of Russian choices under different deterrence circumstances. We employ a most similar case comparison by choosing cases that have the same gray zone conflict initiator (Russia), the same target (North Atlantic states), and the same means (cyber attacks), but that differ in what motivated Russia to choose gray zone conflict over another ordinary competition or high intensity conflict (Bennett and Elman 2007).

One of the primary ways differences in motivation can be inferred is the result of the NATO response. Our theory predicts that when gray zone conflict is chosen because of successful deterrence, responding to gray zone conflict will de-escalate the situation and result in the initiator choosing ordinary competition as their next preferred option. When gray zone conflict is chosen because it's the most efficient means of achieving their objective, responding to gray zone conflict will escalate the situation because the initiator now has to resort to more costly high intensity conflict to achieve their objective. We test our theory against two alternative explanations. First, that gray zone conflict is chosen because of limited capabilities and/or aims and second that high risk at high levels of conflict disincentivizes low levels of conflict.

Table 2: Russian Interventions

		Georgia (2008)	Chechnya (1994)	Ukraine (2014)	Estonia (2007)	Kosovo (1999)	US (2016)
Deterrent							
Gradient	Distance from DC	6	5	4	3	2	1
	Alliances	(-)	-	(-)	Y	(Y)	Y
	Russia Military Advantage	Y	Y	Y	Y	-	-
	Russia Vital Interest	Y	Y	Y	(-)	-	-
Behavioral							-
Response	Conventional Military	Y	Y	(Y)	-	(Y)	
	Paramilitary/Covert Ops	Y	Y	Y	(Y)	(Y)	-
	Cyber Disruption	Y	(Y)	Y	Y	Y	(-)
	Information Ops	Y	Y	Y	Y	Y	Y

Legend: Y indicates that factor was present for that case. (Y) means that factor was possibly present, but less so. (-) means that factor was likely not present, but possible. - means the factor was not present for that case.

The distance codings are ordinal with 1 being closest to DC.

Table 2 shows the role that deterrence plays in motivating gray zone conflict by Russia. This represents 4 important and known Russian cyber attacks against the West (Georgia, Estonia, Ukraine, and the United States) as well as two other cases (Chechnya and Kosovo) to serve as a benchmark. In each case, we investigate the role deterrence played in shaping Russia's choice of military tools. For each case, we code 4 factors that influence the degree of deterrence affecting Russia's decision of how to initiate conflict (deterrent gradient), as well as Russia's behavioral response indicated by the means deployed in that conflict (behavioral response). We then compare the expectations of our deterrence-motivated theory with the two alternate explanations described earlier.

We operationalize the degree of immediate US deterrence in each of these cases using 4 factors. The first represents a loss of strength gradient, measured as distance from Washington, DC.⁵ The further a conflict theater is from Washington, DC, the higher the loss of strength gradient. Cases with a higher value are those that are more distant from Washington, DC. Our theory expects that cases that are geographically closer to the United States are more likely to witness Russia pulling their punches because of the deterrent threat. Second, we measure the role that alliances play, largely operationalized by the

⁵ We considered other geography measures of the loss of strength gradient like distance from Moscow or contiguity with Russia, but there was less variation on these measures given half the cases border Russia (Georgia, Ukraine, and Estonia) and one (Chechnya) occurred within Russia's borders.

target state's relationship with NATO. Our theory expects that Russia will be more likely to pull their punches because of deterrence when in conflict with states that have closer ties to NATO. Third, we measure Russia's perceived military advantage in the conflict based on assessments about the military response the target state could muster. Lastly, we measure whether Russia had a vital geopolitical interest in the outcome of the conflict. The behavioral response parameters describe the combination of actions Russia undertook during their military intervention. On these last two measures, we expect that Russia is more likely to be deterred into pulling their punches during conflicts where it lacks a military advantage or vital interest in the outcome.

Upon initial observation, the pattern of Russia's behavioral response appears consistent with the logic of our theory that deterrence encourages powerful states to pull their punches and utilize fewer of their military resources in a conflict. The four components of our deterrent gradient are correlated with one another and there is face validity to the pattern showing a more limited behavioral response in cases where the deterrent gradient is is strongest. The cases are ordered from left to right according to their aggregate codings on the deterrent gradient with those on the right having the strongest codings for deterrence-oriented factors.

Georgia

In early 2008, an election was held in Georgia following accusations that the incumbent, President Mikheil Saakashvili, was suppressing political dissidents. Despite the accusations, he was re-elected in part due to his promise to uphold Georgian territorial integrity. At this same time, Georgia also declared their aspiration to join NATO which was welcomed by NATO at the Bucharest Summit Declaration. Soon after, suspicion arose within the Georgian government that Russia was responsible for a wave of cyberattacks against Mikheil Saakashvili that included DDoS attacks, ICMP floods, TCP SYN floods, and HTTP floods (Shakarian 2011). The Shadowserver Foundation, a group that tracks cyber attacks, traced these attacks back to a Machbot controller that had over 15,000 bots issuing these attacks (Nazario and DiMino 2008). These attacks continued for months and targeted internet connections that were connected to physical infrastructure like oil pipelines. This was the first time that known cyber attacks had coincided with a kinetic shooting war given the Russian invasion into Georgia.

This combination of cyber influence and disruption (propaganda, espionage, DDoS), active measures (covert military operations), as well as norms violations and sovereignty infringements (e.g. "passportization", airspace incursions) is characteristic of gray zone conflict. We argue that this gray zone conflict was motivated by deterrence initially, but the ineffective US response then changed Russian strategy by employing gray zone strategies

for its efficiency. Of the six cases of Russian gray zone conflict examine here, Georgie is geographically the farthest from the US and thus has the highest loss of strength gradient from a geographic perspective. Georgia's alliance ties to NATO are also weak; at the time Georgia was a member of NATO's Partnership for Peace (PfP) programme, indicating an interest in joining NATO, but had not yet started NATO Member Action Plan (MAP) which would have represented the next necessary state in NATO accession. Russia had a military advantage over Georgia and had a vital interest in quelling Georgia's demands for territorial integrity. Congruence between the Kremlin's irredentist policies and secessionist attitudes in Abkhazia and South Ossetia stoked pro-Russian sentiment in restive regions inside Georgian territory, producing negative synergies that intensified in the Summer of 2008 that rose above ordinary levels of interstate competition (Shchedrov 2008; Deibert, Rohozinski, and Crete-Nishihata 2012).

As a result, we conclude that Russia's decision to implement gray zone operations in this conflict was motivated by efficiency, not deterrence, since the four characteristics on the deterrent gradient indicate a low presence of deterrence factors. Russia was able to achieve its objectives at a low cost since resource to conventional military and legal tools was foreclosed to Georgia and its allies. The challenge of attribution for cyber operations provided the suspected perpetrators with plausible deniability. Other low intensity activities were calibrated to avoid thresholds justifying armed self-defense. As a result, our theory predicts that a US response that raised the cost of gray zone conflict would have only escalated the situation since Russia's actions were chosen not because of a fear of escalation, but a calculation that its objective could be accomplished at a lower cost. Once Georgia miscalculated the extent of Western deterrence, Russia's suspicions about the lackadaisical US commitment were confirmed and they were able to invade with a free hand.

Estonia

The 2007 case from Estonia reflects a cautious Russian effort in the gray zone somewhat constrained by NATO's general deterrence. It represents a gray zone conflict because the retributive cyber rioting that took place after a Soviet-era statue was relocated from the center of Tallinn to its outskirts temporarily altered the status quo in Russia's favor without eliciting punishment (Geers 2008). All sides – belligerents, their agents, and the targets – were relatively inexperienced with cyber operations at scale in 2007.

Regarding the deterrence gradient, Estonia ranks as the median case. It is geographically closer to Washington, DC than Georgia, Chechnya, and Ukraine but is further than Kosovo and the United States itself. Estonia was a formal member of NATO at the time of the cyber attacks and although Russia had a conventional military advantage over Estonia, it lacked a

vital interest in punishing Estonia for moving a statue outside of the center of the capital. As such, our theory predicts that Russia was restrained in the tools it chose to employ because of deterrence. The combination of immature organizational processes for dealing with hostile cyber operations, risk of overreaction by the recipient state, or its allies, could have led to miscalculation, and unintended escalation into the conventional warfighting domains, where NATO maintained escalation dominance (Slayton 2017). These risks and the cross-domain threats arrayed against Russia likely motivated the choice to engage by limited means.

Since Russia's choice of aggression was motivated by deterrence, a Western response that disincentivized this level of conflict would be de-escalatory. Though sometimes cast as a Russian victory, the Estonia event was highly visible, and galvanized states to begin thinking through the implications of operational cyberspace. As Western governments and alliances began hardening networks against vulnerabilities exposed by the crippling Internet traffic directed into Estonia, it appears that the space for effective ad hoc gray zone cyber operations narrowed. Policy actions and the establishment of new institutions raised the profile and resources of cyber defense capability, eliminating some of Russia's leverage over its neighbor. NATO's network resiliency built up since 2007 through a combination of technical defense and efforts to overhaul member states' defenses, provide training, and deploy rapid network repair teams confers deterrent reputational effects on the alliance. Lindsay and Gartzke (2017) point out that, "skilled cyber defense, above and beyond the ability simply to detect threats, enhances deterrence by denial." As a consequence, cyber operations from 2007 onward exhibit more planning; the potency of more mature cyber toolkits was proven just a year later in Georgia. The Western reaction had prompted Russia to once again have to "design around" the deterrence of the United States and its allies.

US Election

By now, there is general consensus that the Russian government interfered in the 2016 US election by hacking the Democratic National Committee and leaking incriminating information and also by employing bots on facebook to foster the dissemination of information that would sway public opinion in favor of a Trump presidency (Marten 2017). President Obama's attempts to investigate such allegations prior to the end of his term in office were met with resistance from Republican legislators and thus the true extent of Russian involvement was not known until after the inauguration (Fidler 2016).

The case of Russian interference in the 2016 US election is a case of gray zone activity by Russia because Russia, despite being a militarily capable actor with a strong interest in influencing the result of the US election in a manner amenable to its desired geopolitical goals, chose cyber attacks as a comparatively limited strategy relative to other ways they

could have weakened the US. Although Russia felt that the benefits of changing the electoral results were high, they simultaneously realized the potentially high cost of such a strategy if the United States were to retaliate. In terms of the deterrent gradient described in Table 2, the continental United States is far closer to Western interests than the East European countries targeted in other cyber operations. Furthermore, Russia does not possess a military advantage over the United States the way it does over Estonia, Ukraine, or Georgia, and while Russia had a strong interest in changing the results of the US election, it was not a vital Russian interest in the same way Georgia and Ukraine were. Russia's tactics in this case did not extend past information operations. To date, there were no known cyber disruptions or other types of cyber attacks attributed to Russia beyond information dissemination and manipulation.

Efficiency best explains Russia's decision to engage in this gray zone conflict in this manner. Their goal was simply to influence the result of the US election and manipulating the spread of information that would influence voter decisions was a low-cost way of accomplishing that objective. They could have engaged in more intense and involved kinds of cyber operations as they did in Georgia, Estonia, and Ukraine, but that was not needed and would have been more likely to provoke a retaliatory response from the United States. As it stands, Russia's electoral interference has gone essentially unpunished by the United States, demonstrating that Russia correctly calculated that their information operations would operate below the threshold of war and avoid escalation while accomplishing their limited objective. This is more convincing that the alternative explanation about the duration of conflict since this conflict was short to medium-term in length, unlike longer conflicts like Chechnya and Georgia that also witnessed Russian cyber operations. Maturation also does not explain Russia's decision to use information operations because although this was the most recent example of Russia cyber attacks, it was also the most limited. More advanced forms of cyber attacks like cyber disruption were used in earlier operations like Kosovo and Estonia but were omitted in this case.

Discussion

Our innovation demonstrates a shortcoming of prior conceptualizations of gray zone conflict; the term itself is ambiguous and whether the limited-ness of a war is defined simply by its intensity is unclear. This also helps clarify the relationship between nuclear weapons and limited war. It seems odd to argue that every non-nuclear conflict that a nuclear power engages in should be considered a limited war. When nuclear powers choose to forgo use of their nuclear arsenal, that decision should not be considered gray zone conflict by virtue of its reduced intensity. The level of conflict alone does not

determine whether an action should be considered gray zone conflict since that action must be considered in light of its motivation.

Our theory's new clarification about the distinction between gray zone conflict and asymmetric warfare by less capable actors matters for US foreign policy strategy. Observationally, 'limited wars' often look similar. Limited actions by Russia in Crimea use similar forces and are of a similar scope to actions undertaken by non-state actors. But although the behavior looks the same, the motivations are different. In one case, an adversary's actions are limited by choice while in the other case an adversary's are limited by necessity. Failure to appreciate this distinction results in the ill-advised application of counter-terrorism or asymmetric warfare doctrine and strategy to cases of gray zone conflict with potentially disastrous implications.

Table 3 compares our theoretical predictions about the motivation for gray zone conflict with that of prior theories of limited war. The first -- limited means and ends -- provides an explanation for when gray zone conflict occurs, but has no varying prediction about its causes. In the cases presented, Russia limited its capabilities in the conflicts where it lacked a vital interest in the outcome. However, neither theories of limited war that focus on limits means nor limited ends can explain Russia's actions in Chechnya, Georgia, and Ukraine where Russia had many means it could have employed to achieve concessions from the adversary. Similarly, previous work on the stability-instability paradox provides no clear prediction about the consequences of increasing the cost of gray zone conflict because it presumes that cases of escalation (Chechnya and Georgia) were cases of the spiral model. But in these cases, Russia did not pull their punches because of the high cost of high intensity conflict, rather they pulled their punches because they felt that bringing more capabilities to the proverbial battlefield would be an inefficient way of accomplishing their limited objectives.

Table 3: Theoretical Predictions

		Chechny a (1994)	Georgia (2008)	Ukraine (2014)	Estonia (2007)	Kosovo (1999)	US (2016)
Empirical Observation		Е	D/E	D	D	D	E
	(D)eterrence vs (E)fficiency	Е	D	D	D	D	Е
Theoretical	Limited (M)eans vs (En)ds	-	-	-	En	En	En
Prediction	SIP (D)eterrence vs (S)piral	-	-	-	-	D	D

The examples provided of Russian gray zone operations carried out as cyber attacks in Ukraine, Georgia, and Estonia suggest the role that deterrence has played in motivating Russia's strategic decisions. Deterrence manifested itself via geographic proximity to the US, the alliance ties of the target country, whether Russia had military superiority relative to the target in question, and whether that conflict zone represented a vital interest for Russia. The cases where Russia was least deterred, as measured by these four operationalizations, were those where Russian operations were most characterized by gray zone conflict. Furthermore, when Russian gray zone operations were met with a response designed to disincentivize this activity, whether those operations were motivated by deterrence or efficiency explains whether that conflict escalated or was successfully de-escalated by the Western response.

Although not discussed in detail here, Russian operations in Chechnya and Kosovo also provide useful context. Russia's misjudgement about the intensity of military resistance against its effort to reclaim Chechnya was mirrored in the cyber domain. Chechen loyalists repeatedly thwarted Russian strategic planners' effort to control the information environment by launching attacks against Russian state media, and re-launching or relocating websites with content that competed with Russian portrayals of the war (Bullough 2002). The Chechen insurgency and online ingenuity no doubt raised costs for Russia, but cyber operations were not pivotal because they operated as an adjunct to covert and conventional military operations. Russia judged intervention to be the most efficient way to prosecute war in Chechnya, and eventually prevailed; disinformation and disruption propagated in the cyber domain were not decisive. But Chechnya and Kosovo are significant cases in the history of Russian cyber campaigns for occurring at a time when Russia appeared to be testing a new conceptualization of cyber-enabled conflict requiring fewer elements of power to achieve political-security objectives, the defining feature of gray zone conflict (Bullough 2002).

The targeting of websites sympathetic to Chechnya, and defacement of NATO websites during the intervention in Kosovo, appear to fulfill a vision of contemporary conflict taking shape around the time Vladimir Putin ascended the Russian presidency. In late 1999, deputy chief of the Russian Security Council, Vladimir Vasilyev pronounced, "[i]t is clear that today a fight is going on over public opinion both inside the country and abroad, and that whoever gets to shape it, to direct it, is going to be winning in this process" (Feuilherade 1999). In 2001, while Putin defended Russia's policy in Chechnya during a special Internet interview live streamed by the BBC his spokesman explained, "We wanted to show that we understand that the Internet is an important part of forming public opinion" (Tyler 2001). If the dividends of capturing public opinion match those gained from

capturing territory and come at much lower cost, then it would be optimal for an initiator to advance political objectives by operating primarily in the gray zone (Snegovaya 2015). Becoming proficient in gray zone operations, an initiator could alter the status quo without waging war, and foreclose target state justifications for responding with conventional deterrence measures (Lin 2015).

A parallel can be made between this analysis of gray zone conflict and the discussion of "calculated nuclear ambiguity" that surrounded the first Gulf War. Former US Secretary of State James A Baker III described US nuclear policy in the Persian Gulf War as one of calculated ambiguity in reference to the alleged US response to Iraqi use of chemical and biological weapons (CBW) (Arkin 1996). In 1996, Secretary of Defense Perry said that the US response to Iraqi CBW usage was intentionally ambiguous because the US thought that if Iraq was unsure about what the response to CBW use was, they would be deterred from using them (Sagan 2009). This held true despite a private decision by the White House to not use nuclear weapons in response to a chemical attack, a decision the White House kept secret from the Iraqi government and the Pentagon. The purpose of this ambiguity was the convince the opponent that the worst could happen. The threat made by the US had to be seen as credible, requiring Clinton to say something. Deterrence is a product of capability and credibility. For deterrence to succeed, the expected cost of punishment multiplied by the probability that the threat will be implemented has to exceed the aggressor's expected gain from initiating a conflict (Sagan 2000). What further complicated the Iraq situation was that the US had forsworn the use of chemical weapons, meaning it could not credibly threaten to response to CBW use in kind. So instead, it opted to escalate with an ambiguous asymmetric nuclear response.

Calculated ambiguity plays an important role in understanding the uniqueness of gray zone conflict because nuclear weapons have forced strategic planners to consider a range of alternative uses of military forces that were not just the upper limit of general nuclear war (Stephens 1994). After World War II, countries wondered how to fight a conventional war in Europe without it escalating to nuclear use. In 1957, Kissinger and Osgood tried to figure out limited war and avoiding escalation by placing restrictions on the types of targets and weapons systems as well as ways to limited the geographic scope of a conflict (Woodman 1991). In this sense, although gray zone conflict may not be something new, the scope of gray zone conflict may have shifted as a result of historical events. Conflict is certainly a continuum, but we need to do a better of describing where the breaks in that continuum lie. The importance of a new definition of gray zone conflict then is a renewed understanding of the conditions that motivate forms of conflict that lie beneath the break of conventional conflict but above the break of ordinary interstate competition.

Conclusion

This paper argues that while "conflict short of war" is an old concept, gray zone conflict requires a new understanding that focuses on explaining its causes. In particular, this paper introduces the concept that gray zone conflict is conflict involving capable actors who intentionally limited the intensity and capacity that they dedicate to fighting because they both prefer low-intensity to high-intensity conflict. The gray zone of the spectrum of conflict is expanding because of new causes of peace in the 21^{st} century — namely the "carrot" of interdependence and the "stick" of deterrence. An actor's motivation for choosing to operate in the gray zone area of that spectrum determines the outcome of the target's response.

We offer a re-conceptualization of gray zone conflict through the lens of deterrence. Understanding a nation's motivation for engaging in gray zone conflict enables the target to determine its best response. A challenger that initiates gray zone conflict has made a calculation about the type and degree of provocation that would trigger an escalatory response from the defender. Our theory notes that the risk of high level conflict may fail to disincentivize, and may even facilitate, low level conflict (Snyder 1967). Gray zone strategies have developed as a response to the success of "high stakes" deterrence, as an end run around their (effective) restrictions. "Low stakes" gray zone conflict emerged as actors dialed back the level of violence to minimize exactly the risks posed by classical deterrence in practice. The high benefits of peace made possible by interdependence and deterrence have created a platform for adversaries to be revisionist and hassle without triggering a loss of cooperation. As such, there is no clear answer to the security dilemma in Europe. Russian gray zone conflict is not a strategy that can be treated homogeneously. If the United States allows every instance of gray zone conflict to go unchecked, it risks giving Russia easy victories for cheap. But at the same time, reacting to every instance of gray zone conflict by increasing the cost of such actions risks escalation in cases whether the United States is better off allowing its adversary to pull its punches out of the fear that doing more will invite retribution.

US grand strategy must therefore toe a difficult line; trying to understand the motivation for gray zone conflict and reacting accordingly. If we are in the first situation where the initiator chose gray zone because they are cost-averse, then raising the cost of gray zone conflict will likely result in peace. However, if we are in the second situation where the initiator chose gray zone conflict because they prefer limited war as a lower-cost means of achieving their objectives, then raising the cost of gray zone conflict could risk escalation. The classic debate in security studies between the deterrence model and the spiral model applies to gray zone conflict in a novel way. Whether the response to gray zone conflict inhibits conflict (deterrence model) or inflames conflict (spiral model) depends on whether

the initiator's actions are influenced and motivated by previous rounds of deterrence success.

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