



BOOK REVIEW ROUNDTABLE: The Future of War

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Summary

Sir Lawrence Freedman's latest book, *The Future of War*, asks why futurists have so often gotten it wrong when it comes to predicting war.

1. Introduction: A Strategist at Work

Kori Schake

I love the concept of Lawrence Freedman's *The Future of War: A History*. Freedman looks at how individuals in the past have expected conflicts to unfold, and explores why they so frequently — and often spectacularly — got it wrong. It's a terrific prism through which to see how little the present has to say about the future.

Freedman is the very best kind of tour guide, convivial and informative, seeding well-known stories with unexpected facts to savor. The chapter headings alone jostle the imagination as they trace the evolution of thinking about war, highlighting Freedman's ability to harness examples from newspapers of the 1890s, Walt Whitman's lamentations of the infringement of war on civilian populations, movies about the Vietnam and Iraq wars, and Los Angeles gang wars — a domestic example of low-level insurgencies that fray governance in urban settings.

Futurists of warfare suffer from the same failures of imagination that frequently shackle their brethren in other professions: They overemphasize present trends and assume that their society's cultural norms will similarly bind their adversaries.¹ Futurists are often mistaken in their predictions because they draw straight-line projections from current data. As Freedman writes, projections are “about the present as much as about the future.”² Projecting accurately into the future requires imagining discontinuous behavior — wars that decimate China's economic development, or perhaps propel it;

¹ For an incisive study of the domestic consequences of war, see Seva Gunitsky, *Aftershocks: Great Powers and Domestic Reforms of the Twentieth Century*, (Princeton University Press, 2017).

² Lawrence Freedman, *The Future of War: A History* (New York: Public Affairs, 2017), 286.

breakthroughs in technology that radically reshape the supply and demand curves for energy; dramatic reversals of public attitudes that expand or contract the political space.

Perhaps predictors of war read too much history and not enough evolutionary biology. Stephen J. Gould's idea of contingent evolution may fit intellectual development even better than it does the process of natural selection.³ Gould posits that in any scenario there are many potential trajectories, perhaps even many diversions from the current path, yet people tend to draw a straight line from the starting point to the current location — they don't account for dead ends or butterfly routes that meander. Nature and strategy may be more profligate in their development than straight lines capture.

The Decisive Battle Narrative

But if futurists have it wrong by projecting current trends forward in time, those who believe in victory stemming from a decisive battle have it wrong because they project nostalgically into the past. They imagine a mystical time when armies formed and fought, and durable political settlements were struck as the dust from the battle settled. Military professionals festooned with breakthrough technologies and unhindered by politicians' interference dictated the plans and produced politically salient results with a minimum of civilian casualties.

It's a delight to see Freedman tackle the mistaken expectation of a decisive battle in his enormous body of work. If Geoffrey Blainey is right that Occam's Razor shears away all other explanations of why states go to war, leaving only that they believe they can win, Freedman's corollary is that strategists wrongly anticipate one key conflict that will

³ Stephen J. Gould, *Wonderful Life*, (New York: Vintage, 2000), 14.

decide the fate of the war.⁴ In his previous work, *Strategy: A History*, Freedman traces that mistaken theory of conflict to the Napoleonic Wars, where strategists focused on Jena and Waterloo rather than the grueling Iberian and Russian campaigns. In *The Future of War*, he uses the 1870 Battle of Sedan between Germany and France to pound the last nails into a coffin he's been constructing across much of his work in the past fifteen years.

Freedman instead supplants decisiveness with duration as the critical factor in war, “because if the enemy proved to be resilient then over time non-military factors would become progressively more important.”⁵ This is the essential lesson of his book: Efforts to strike the first blow “were not taken as warnings of the folly and futility of aggression, but instead of how the unwary might get caught.”⁶ In reality, according to Freedman, the ability to absorb a surprise attack and draw out a war — what in Eisenhower administration debates about national security policy was discussed as broken-back warfare — is the winning strategy. It is, however, a lesson triumphalists of decisive battles from Austerlitz to the American shock and awe theory of war have had to relearn with depressing regularity.

What makes Freedman's latest book, and so much of Freedman's recent work, so powerful is that he gives full sail to the breadth of his knowledge on so many topics and brings them to bear on the subject of military strategy. He is especially good at exploring the ways literature has been used to shake the establishment out of complacency, from Sir George Tomkyns Chesney's *The Battle of Dorking* to August Cole and Peter Singer's

⁴ Geoffrey Blainey, *The Causes of War*, (New York: Free Press, 1988), 41.

⁵ *Future of War*, 10.

⁶ *Future of War*, 279.

Ghost Fleet.⁷ It's such a pleasure to watch the finest academic strategist writing today craft the trajectory of this story.

Yet, Freedman glides lightly over the failures of contemporary military and civilian strategists to confront the botched current U.S. wars, which is surprising given that Freedman was the intellectual force of the Chilcot Report that so scathingly assessed the Blair government's Iraq War mistakes. While Freedman chronicles the blind spots and shortcomings of war prognosticators and strategists, I would have liked to read more of his thoughts about other possible choices those individuals might have made and where they would have taken the United States and the United Kingdom. I also would have enjoyed reading him celebrate more of the astringent outliers, the lone voices who have gotten the future right, like Charles J. Dunlap, the military lawyer whose dark foreboding of how the United States would lose future wars was a shock when he wrote it in 1996.⁸

The Challenges and Benefits of Quantitative Analysis

Like other reviewers, I found Freedman's extended survey of the quantitative analyses of political scientists discordant with the first half of the book.⁹ I agree with Freedman's assessment that the mania for quantitative studies is often devoid of the context needed to understand the causes and consequences of war. As Freedman has elsewhere emphasized, interstate wars are both rare and their circumstances particular. Otto von

⁷ *Future of War*, 4, 252.

⁸ C.J. Dunlap, Jr., "How We Lost the High-Tech War of 2007," *Weekly Standard*, Jan. 29, 1996.

⁹ Douglas M. Gibler, Beatrice Heuser, Mara Karlin, Joshua Rovner, and Lawrence Freedman, "Roundtable 10-14 on *The Future of War: A History*," *H-Diplo/ISSF*, May 18, 2018, <https://issforum.org/roundtables/10-14-future-of-war>.

Bismarck summed it up well when he stated that politics isn't a science, it's an art.¹⁰

Constructing coded data sets risks making the same mistake Graham Allison made in his book on the "Thucydides trap": forcing a problem into a political science framework wherein n must be greater than one.¹¹ In reality, each interstate war is utterly unique, thus n can never be greater than one. The joke among baseball fans about whether there is a 162-game season, or 162 one-game seasons gets at the heart of the problem. The history of war is surely made up of 162 one-game seasons.

However, I'm less convinced that political science's penchant for quantitative studies has prevented an understanding of the conflicts prevalent after the Cold War, because such an assertion would seem to give one branch of largely inaccessible academic study much more influence than it merits. University political science departments prejudice hiring in the direction of quantitative political science, but those works have very little effect on either public understanding or policy choices. Just to take the example of democratic peace theory, the academic obsession with proving it lagged more than a half century behind the policy relevance of the idea. Nor has this field prevented regional specialists and historians from having sway.

That excessive quantification can obscure rather than enlighten the study of war has been clear since Thomas Malthus' 1798 *Essay on the Principle of Population*. Yet, that much quantitative work is obscurant rather than enlightening isn't sufficient to merit ignoring its contributions. First, because, historically speaking, quantitative political science is still in its early stages, and refinements are improving the numbers and providing more robust

¹⁰ Otto von Bismarck, Horst Kohl, *Bismarckreden: 1847-1895* (1899), 255. As quoted in translation in William Roscoe Thayer "Cavour and Bismarck," *Atlantic* (Mar 1909), 103, 343.

¹¹ Graham Allison, *Destined for War: Can America and China Escape Thucydides's Trap?* (London: Scribe, 2017).

insights.¹² Freedman’s criticisms, however well founded, may underestimate the evolution of the form — perhaps the best parallel is the use of sabermetrics in baseball, where number crunching once seen as an affront to the studied judgment of seasoned scouts has now become an invaluable aid to them.

The second defense of quantitative political science comes from Theodore Sturgeon’s *Revelation*. The science fiction writer was once challenged about the low quality of the genre. He responded that what was relevant was not that 90 percent of science fiction writing was crap, but that “ninety percent of everything is crap.”¹³ That is, the problem was not unique to the genre, but could be applied to all genres. Just so, Freedman’s critique of quantitative political science can be responded to by noting that much of history writing is likewise unenlightening — the work of accountancy, or overloading the reader with excessive facts and citations, rather than the lively storytelling characteristic of Freedman’s work.

A Well-Rounded Discussion of *The Future of War*

Because Freedman’s work is so broad ranging, and the question he poses is relevant across so many fields of study, this roundtable has gathered experts from several different fields to share their thoughts on his latest book. All of them are, in different ways, in the business of imagining the future: by guiding politics, pulling technology forward, utilizing technology to advantage in warfare, or establishing boundaries for its

¹² Douglas M. Gibler, Steven V. Miller, and Erin K. Little, “An Analysis of the Militarized Interstate Dispute (MID) Dataset, 1816–2001,” *International Studies Quarterly* 60, no. 4 (December 2016),

<https://doi.org/10.1093/isq/sqw045>.

¹³ Theodore Sturgeon, *Venture* 49, September 1957 (for more on *Venture*, see “*Venture*,” *Wikipedia*,

https://en.wikipedia.org/wiki/Venture_Science_Fiction).

ethical use. Each contributor sinks their teeth into different aspects of *The Future of War*, illuminating warfare from their unique perspectives.

Mike Gallagher, a veteran of the U.S. Marine Corps, represents Wisconsin's 8th district in the U.S. House of Representatives and serves on the Armed Services Committee. His essay focuses on the failure of technology to prevent adversaries from finding creative ways to stymie success — despite optimism that technology would change the fundamentals of warfare. He also expresses disappointment, as an elected official responsible for preparing American military forces for the future, that Freedman doesn't offer more practical advice for how to improve predictions of warfare. Gallagher explores the "internal constraints that can explain forecasting failure," in particular the continuing failure of the United States to marshal regional and cultural expertise in its national security establishment.

Heather Roff is senior research analyst at the Johns Hopkins Applied Physics Lab. She was previously the ethicist at Deep Mind, Google's artificial intelligence arm, and has been on the faculties of Oxford University and the University of Colorado at Boulder. In her review, Roff challenges Freedman's exclusion of the Korean and Vietnam wars from his discussion of how past conflicts can lock future strategists into fixed "scripts," as those wars cast the longest shadows across contemporary foreign policy and technology challenges. In particular, she discusses the expansion of power of the presidency in times of war and the failure of the United States to understand the Vietnam War from its adversary's perspective.

Sakunthala Panditharatne is the founder of the company Asteroid Technologies that designs 3D graphics and animations for augmented reality applications. Her exploration of ideas on Twitter is the intellectual equivalent of setting sail with Columbus. Her review

of Freedman's latest work draws parallels with economic historian Carlota Perez's *Technological Revolutions and Financial Capital*. Panditharatne sees that "trends in technology and organizational dynamics have led to the increasing complexity and hybridization of warfare, much like the increasing complexity in business known as the 'knowledge economy.'" Particularly interesting is her exploration of how personal computers and internet connectivity are shifting power from large and centralized organizations toward small networked organizations — both in businesses and militaries — and the role that legitimacy now plays in the wake of that shift. I ardently hope she proves right in her assertion that "Hybrid warfare should lend an advantage to nations with lots of soft power, which are able to attract and retain top technical talent both in industry and in the military directly, an encouraging conclusion for proponents of liberal democracy."

Pavneet Singh and Michael Brown are with DIUx, the Department of Defense's scouting arm for commercial technology for military use. Brown is the former president and CEO of Symantec, and has led numerous other tech companies, including Quantum and EqualLogic. Singh has worked on the National Security Council, the National Economic Council, and at the World Bank. Their essay explores some of the "signposts" for predicting war that they argue Freedman missed. This includes suggesting expanding the analysis beyond the United Kingdom and America to understand how other cultures, which take a longer view of history than the Anglo-American culture and political systems, view the future of warfare; delving more deeply into the link between economic trends and the outcomes of war, because of warfare's reliance on economic strength; and recognizing "the role and decisiveness of superior technology." Brown and Singh argue, "There is no disputing the fact that whoever has significantly superior technology will emerge as the victor in a future conflict." They also see important differences between

great power wars and regional wars, distinctions that Freedman fails to consider in his analysis.

Conclusion

The Future of Warfare serves as a reminder that strategists must relentlessly reevaluate their analyses, searching for where their assumptions may have been wrong or where they no longer capture the critical elements of the problem. Good strategists also ought to be desperate paranoiacs, constantly fearful a trap door is going to open underneath them, always crafting back-up plans for how to prevent being dumped into the sewer that waits below.

Freedman cautions that the most dangerous and destabilizing contemporary factor would be “a decision by the United States to disentangle itself from its alliance commitments.”¹⁴ This is particularly poignant given President Donald Trump’s recent disgraceful behavior toward America’s NATO allies. The world may now be seeing unfold the future that this great scholar of warfare worries most about. Freedman’s exploration of the attitudes, art, and scholarship of individuals from history suggests that it may not be long before these years are referred to as the inter-war period.

Sir Lawrence Freedman is the most incisive and influential academic writing about warfare today. He took the profession by storm with his Ph.D. dissertation on U.S. intelligence and the Soviet strategic threat, wrote the official British history of the Falklands War, built the renown War Studies Department at King’s College London, made seminal contributions to both the 1999 Blair doctrine and the Chilcot report, and has been

¹⁴ *Future of War*, 282.

a mentor to practically every young scholar in the field. This book shows him a strategist in full, drawing on a career of thinking carefully about warfare to ask why it is so difficult to see coming the kinds of wars that are actually fought? At a time when much of academia has narrowed its focus, his work is a clarion call to ask big, important questions. I'm so pleased and grateful that this interesting group of thinkers from different fields gave their time to look at *The Future of War*. And I'm delighted they didn't defer to his stature or become intimidated by the vastness of his knowledge in critiquing his work. Instead, they paid him the highest professional honor: engaging seriously and critically with his ideas and arguing about their applicability to — and beyond — warfare.

Kori Schake is the deputy director general of the *International Institute for Strategic Studies* and the author of *Safe Passage: The Transition from British to American Hegemony*.



2. War May not Be Predictable, but There Are Warning Signs

Michael Brown and Pavneet Singh

In *The Future of War*, Lawrence Freedman offers a sobering assessment of war forecasters over the last 150 years: They were largely wrong. What's more, in prescribing a self-interested set of policies and actions, they overlooked the real levers that cause conflict to happen. War is at best blurry, and impossible to divine from present conditions. By reviewing an extensive body of both fiction and non-fiction, Freedman takes aim at the romantic notion that a decisive first blow or the possession of advanced technology will ensure expeditious victory for the aggressor. The former, he says, never achieves the efficient win it promises, and the latter offers little utility in predicting war, but rather provides insight on how wars might be fought. While he does not make his own predictions on the future of war, Freedman identifies a few key trends that are likely to persist: 1) War will always be bloody and violent, 2) conflicts that are ongoing today (e.g., wars in sub-Saharan Africa) will continue because the international community has not come up with a way to stop them, and 3) war will be nasty, complicated, and motivated by social and political behaviors. His core conclusion is that predictions on the future of war should be made with genuine humility, and policymakers should maintain a healthy degree of skepticism before acting on these predictions.

In a world obsessed with decoding the future, whether in finance or politics, rarely does one travel back in time to assess the predictions of an earlier era. In this respect, Freedman's attempt to retroactively parse and grade the influence of futurists is refreshing and should encourage more introspection in the national security decision-making process. However, by simply abandoning at the outset the notion that any predictive models of future wars can be made, this volume does not live up to its

tremendous potential. Freedman identifies a litany of “speculative possibilities,” but does not extract the legitimate markers that can inform current and future judgment — not necessarily in order to predict war, but to highlight the relevant warning signs. Below, we discuss three such signposts that Freedman either omits completely or incorrectly dismisses, which have immediate application to current national security challenges.

Three Missed Signposts

First, as the book is designed to “explore the prevailing understandings about the causes of war and their likely conduct and course,”¹⁵ the most glaring oversight Freedman makes is restricting his analysis primarily to the United States and the United Kingdom. His reasoning is simple enough: These are the two countries he “knows the best,” and because they have been atop “the international hierarchy for some time.”¹⁶ Yet, in looking out on the geopolitical landscape and assessing the threats emanating from current U.S. adversaries — or even the ambitions of U.S. allies — it is clear America is dealing with countries that take a generational perspective and whose fortunes within the international order have risen and fallen over millennia. Some of the obvious candidates include the antecedents to the nation-states of Iran, China, India, Turkey, and Russia. Even a cursory examination of these countries and peoples reveals that they have a sophisticated understanding and experience with great power wars, guerrilla warfare, and hybrid conflict.

Moreover, a rich literary canon of war stratagems has originated in these countries — from the “warring states” period in China, when Sun Tzu conceived the *Art of War* (one

¹⁵ Lawrence Freedman, *The Future of War: A History* (New York: Public Affairs, 2017), xix.

¹⁶ Freedman, *The Future of War*, xix.

of several military strategy pieces written in that period), to more recent strategies like India's Cold Start doctrine.¹⁷ This literature shares similarities with the works of Freedman's classical war prognosticators, but also differs significantly on strategies and tactics in war. Indeed, contemporary studies, such as Max Boot's *Invisible Armies, An Epic History of Guerrilla Warfare from Ancient Times to the Present*,¹⁸ provide a much more instructive view of irregular warfare, demonstrating its common use as a strategy dating back to Mesopotamia. Put simply, there is much more to learn about the factors that form the views of adversaries, especially given that their behaviors will likely shape the contours of conflict over the coming generations.

Second, Freedman devotes little, if any, attention to the importance of economic capacity and capability as a determining factor in winning wars. As Paul Kennedy so eloquently lays out in his book, *The Rise and Fall of the Great Powers*, economics has always been a key underpinning of military capability. This was the case in World War I, where the addition of the United States' industrial strength was the decisive factor in the Allied victory. The same was true in World War II, when the U.S. ability to deliver staggering quantities of war materiel was pivotal in defeating the combination of Nazi Germany and Imperial Japan, even without nuclear weapons.

A related third point concerns Freedman's dismissal of the role and decisiveness of possessing superior technology. Freedman emphasizes the lack of predictability of war and the overconfidence in a first-strike, which often does not result in the anticipated

¹⁷ For a detailed analysis of the Cold Start doctrine, see: Walter C. Ladwig III, "A Cold Start for Hot Wars? The Indian Army's New Limited War Doctrine," *International Security* 32, no. 3. (Winter 2007/08): 158-190, <https://www.jstor.org/stable/30130521>.

¹⁸ Max Boot, *Invisible Armies, An Epic History of Guerrilla Warfare from Ancient Times to the Present* (New York: Liveright, 2013).

conclusive victory. However, the examples he provides are cases in which the aggressor did not possess superior technology. In the past 150 years, where there was superior technology, there was decisive victory. Take, for example, nuclear technology, which changed the calculus of decision-making in war. This has also been called the “first offset” — when the United States truly had military dominance against its adversary. Superior technology was also a decisive factor during the “second offset,” when America had overmatch capability against Iraq in the First Gulf War, defeating the sixth largest army in a matter of days with few casualties. This was due to electronics-infused warfare: command-and-control capability through GPS, satellite communications and battlefield domain surveillance, night-vision, and laser-guided munitions. In other words, the United States has had the benefit of superior technology for 75 years and has only been drawn into stalemates in situations in which U.S. political leaders have not been willing to use all of America’s military technological capability (such as in Korea and Vietnam).

As the U.S. military seeks a “third offset,”¹⁹ and its adversaries catch up to its technology prowess, there is a question as to whether the United States still has the decisive technological advantage. Nevertheless, there is no disputing the fact that whichever country does possess significantly superior technology will emerge as the victor in a future conflict. Unlike Freedman’s conclusion that superior technology does not lead to a decisive win, there are several examples of the United States doing just that through an overmatch in technology.

¹⁹ For a detailed discussion of the “third offset” see Kathleen Hicks et al., *Assessing the Third Offset Strategy*, Center for Strategic International Studies, Mar. 16, 2017, <https://www.csis.org/analysis/assessing-third-offset-strategy>.

The holy grail of military superiority in great power conflict comes from the *combination* of superior technology and economic strength. There have been many conflicts in the past 150 years that did not involve great power competition and in which neither superior technology nor economic strength were factors. These are conflicts whose outcomes are difficult to explain in terms of specific decisive factors. However, to achieve greater understanding, Freedman's book would have been better served by separating the many regional conflicts, civil wars, and terrorism-driven sources of conflict from great power wars. We disagree with Freedman that great power wars are unpredictable, since many great power wars can be explained largely by the two factors of superior technology and economic capability.

Applying these Signposts to China

Taken together, these three points are critical to understanding the intensifying competition between the United States and China. Central to this analysis is identifying and recognizing the factors that shape Chinese strategic thinking — and accepting that they diverge from classical western frames for thinking about conflicts. In a recent article, Aaron Friedberg invokes history as the principal wellspring guiding Chinese leaders over successive generations:

China is not just any rising power; it is a nation with a long and proud history as the leading centre of East Asian civilisation and a more recent, inglorious experience of domination and humiliation at the hands of foreign intruders. China's leaders see their country as not merely rising, but rather

returning to a position of regional pre-eminence that it once held and which they (and many of their people) regard as natural and appropriate.²⁰

Notably, Deng Xiaoping, China's paramount leader from 1978 to 1989, played a seminal role in crafting China's renaissance. It is telling that his philosophy prioritized humility, deception, and endurance as captured in these now famous dictums that "[China should] cross the river by feeling the stones" and "hide its capabilities and bide its time."²¹

The subsequent blueprint implemented by China's leadership includes a relentless focus on building China's economic, military, geopolitical, and ideological power.²² Starting with the economy, China has developed a leading global economy faster than any country in modern history. The timescale during which this growth occurred is stunning: China's economy has grown from 10 percent of the U.S. economy in the 1970s to the second largest global economy — in just fifty years.

China is using its economic power and technology advancements to engage in a rapid peacetime military buildup, aimed at expanding borders across Asia and at sea. China's military strategy is based on developing asymmetric capabilities to neutralize the traditional strengths of the United States in technology (e.g., anti-satellite missiles to eliminate GPS) and deny capabilities derived from expensive force projection that the

²⁰ Aaron L. Friedberg "Competing with China," *Survival* 60, no. 3, (2018),

<https://doi.org/10.1080/00396338.2018.1470755>.

²¹ "Less Biding and Hiding," *Economist*, Dec. 2, 2010, <https://www.economist.com/special-report/2010/12/02/less-biding-and-hiding>.

²² A fulsome analysis of China's understanding of Comprehensive National Power can be found in David M. Lampton, *The Three Faces of Chinese Power: Might, Money, and Minds*, (Berkeley: University of California Press, 2008).

United States cannot afford to replace (e.g., aircraft carriers). Beijing focuses on lower-cost technologies that can leapfrog and put America in a defensive posture, using, for example, swarms of drones or hypersonic missiles. With its “military-civil fusion initiative,” China aims to integrate all of its commercial technology advances into its military capability.²³ It has already achieved superior technology capabilities in a number of critical areas, such as hypersonics and supercomputing, while challenging the United States in artificial intelligence and bioengineering.

Whether America is already engaged in conflict with China (as some have argued),²⁴ or the United States is destined for war (as some predict),²⁵ is a matter of heated debate that we don’t take a position on here. But this example illustrates that there are key indicators (historical, economic, technological, military) that can be discerned and measured to help policymakers make better predictions about future conflicts. Freedman is right that there are distinct differences in conflicts between great powers and regional wars, civil wars, and terrorism-fueled conflicts. What Freedman misses in *The Future of War* is the recognition that they can have different models for war and predictors of outcomes. This is not the same as saying that there are no reliable predictors or indicators for future conflicts.

²³ Greg Levesque and Mark Stokes, “Blurred Lines: Military-Civil Fusion and the “Going Out” of China’s Defense Industry,” Pinte Bello, December 2016,

https://static1.squarespace.com/static/569925bfe0327c837e2e9a94/t/593dado320099e64e1ca92a5/1497214574912/062017_Pointe+Bello_Military+Civil+Fusion+Report.pdf.

²⁴ Michael Pillsbury, *The Hundred-Year Marathon: China’s Secret Strategy to Replace America as the Global Superpower* (New York: Griffin, 2016).

²⁵ Graham Allison, *Destined for War: Can America and China Escape Thucydides’s Trap?* (Boston, MA: Mariner Books, 2018).

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Pavneet Singh is a non-resident fellow at the Brookings Institution and a consultant to DIUx. He was formerly on the National Security Council and National Economic Council focusing on international economic affairs.



3. The Future of War Ain't What It Used to Be

Mike Gallagher

A man who can look ahead and see the pattern of problems that may be emerging has tremendous value.²⁶

-Gen. Andrew J. Goodpaster

In his 2013 book, *Strategy: A History*, Lawrence Freedman developed the concept of “strategic scripts,” which is “a way of thinking about strategy as a story told in the future sense.” These scripts are narratives that can convince a group of how its initial choices are likely to play out.²⁷ They are essentially working theories about how security can be created by linking ends to means, and which of these means are most effective in advancing particular ends (e.g. using force vs. diplomacy). In Freedman’s 2017 *The Future of War: A History*, he demonstrates how often those scripts turn out to be wrong, leaving policymakers pain in place of promised success. What L.P. Hartley once said about the past here applies to the future: It is a foreign country; they do things differently there.²⁸

The inability to look ahead and accurately forecast emerging trends is a theme that pervades this book. Freedman shows how the indecisive and protracted trench fighting of the Great War, for example, undercut Antoine-Henri Jomini’s classical model of war, based on the Napoleonic assumption that “wars could be settled by a well-constructed

²⁶ Andrew J. Goodpaster, *Reminiscences*, Aug. 2, 1967, Oral History Collection of Columbia University, 74.

²⁷ Lawrence Freedman, *Strategy: A History* (New York: Oxford University Press, 2013), xiv, 607–629.

²⁸ L.P. Hartley, *The Go-Between* (New York: The New York Review of Books, 1953), 17.

campaign, culminating in a decisive battle.”²⁹ More recently, the rapid demise of the Soviet Union surprised many in government, undermining the arguments of realists in particular (here Freedman seems to mean structural realists or neorealists), who have since refused to reappraise a theory that

struggled because it had little to say about the impact of major ideological shifts within great powers or the drivers of instability within minor states, or why any serious major power, secure within its own borders, would bother to try to sort out this instability.³⁰

Indeed, as former Secretary of Defense Robert Gates argued,

The liberation of Eastern Europe in less than six months, the collapse of the Soviet Union in less than a year, was stunning, almost miraculous. Very, very few predicted that these revolutionary events would happen in this century. No one foresaw that they would happen so fast.³¹

This inability to accurately forecast the future will be familiar to anyone who has fought in the recent wars in Iraq and Afghanistan, where despite having clear technological superiority, the United States continues to be challenged by low-tech terrorists. Protracted counterinsurgencies waged in urban settings have ended the brief flirtation with reviving a classical model of war or relying on a Revolution in Military Affairs to substitute technology for mass and “get the whole affair over quickly with few

²⁹ Lawrence Freedman, *The Future of War: A History* (New York: Public Affairs, 2017), 8.

³⁰ Freedman, *Future of War*, 109–110.

³¹ Robert M. Gates, *From the Shadows* (New York: Simon and Schuster, 1996), 15.

casualties.”³² Consider the fact that, as Freedman shows, three U.S. presidents announced the end of combat in Iraq and “[e]ach time it turned out that the announcement was premature.”³³ Indeed the idea that new technology will decisively shift the odds of success and change the character of warfare — making it fast, easy, and decisive — is what H. R. McMaster has called a “vampire fallacy,” because it is so hard to kill.³⁴

Freedman’s focus on science fiction novels and films (i.e. actual scripts) further underscores the failure of these official scripts. For example, Freedman argues that H.G. Wells “was the most influential writer on future war of his time.” Despite his adherence to socialism, advocacy for world government, and prediction that World War I would end all wars, Wells gets credit for inventing the tank and highlighting the problems “new weapons might be trying to solve and those they would create,” such as the potential use of air power against defenseless populations.³⁵ Freedman praises the 1958 novel *Red Alert* (the basis for *Dr. Strangelove*) for calling attention to key weaknesses of deterrent strategy and prompting Thomas Schelling to develop “his ideas for a communications link between Moscow and Washington to reduce the dangers the book described.”³⁶

Freedman’s chapter on “Cyberwar” begins with an epigraph from William Gibson’s

³² Freedman, *Future of War*, 188–189.

³³ Freedman, *Future of War*, 119.

³⁴ Freedman, *Future of War*, 279. As Freedman puts it: “By early in the twenty-first century it was apparent that the inherited scripts for future war were inadequate. The US military had clung to an ideal type derived from the classical model and then faced a more unruly form of warfare for which it was poorly prepared and from which it struggled to extricate itself. Their British allies believed that they understood the requirements of Iraq based on their peacekeeping experience of Bosnia and aid to the civil power in Northern Ireland, but their scripts were also inadequate; they found themselves struggling even more than the Americans.” Freedman, *The Future of War*, 222.

³⁵ Freedman, *The Future of War*, 18–19.

³⁶ Freedman, *The Future of War*, 78–80.

Neuromancer, while the chapter on “Robots and Drones” begins with Isaac Asimov’s “Three Laws of Robotics.”³⁷

Freedman’s ability to weave such a diverse set of scripts together into coherent and concise chapters is alone worth the price of admission. The busy reader can easily pick and choose from a menu of different options based on his interest. And at the broadest level, Freedman offers scholars and practitioners a useful lesson in intellectual humility (the first paragraph of the book details the origin of the word “hubris”). *The Future of War* usefully shows where certain scripts went wrong and where individual thinkers and analysts have been overly optimistic, pessimistic, or insufficiently imaginative. Likewise, he shows how militaries — such as the Japanese military in 1941, which believed it could repeat the successes of surprise attacks against the Russians in 1894 and 1904 — have a tendency to try to fight the last war instead of the one they are in.³⁸

Scripting the Future

But as an elected official, and someone who spends a lot of time on the House Armed Services Committee thinking about how to prevent future wars, this is where Freedman left me wanting more. While sufficiently covering the fact that organizations frequently miscast the future, his book has less to say about *why* they do so.

³⁷ Freedman, *The Future of War*, 230, 239.

³⁸ Freedman, *The Future of War*, 63.

For instance, consider what is perhaps the biggest, bipartisan mistake of the post-Cold War era, besides the failure of imagination that led to 9/11:³⁹ U.S. policy towards China. As the 2017 *National Security Strategy* argues,

For decades, U.S. policy was rooted in the belief that support for China’s rise and for its integration into the post-war international order would liberalize China. Contrary to our hopes, China expanded its power at the expense of the sovereignty of others.⁴⁰

The slowness of America’s response to the rise in Chinese power is especially puzzling given that, as Freedman asserts in his chapter “Coming Wars,” by the late 1990’s, China was a “genuinely revisionist power” and the “the most serious long-term challenger to the United States.”⁴¹

Why did American policy take so long to adjust to this new reality? Beyond summarizing the future Sino-U.S. conflict described in the novel *Ghost Fleet*, Freedman has little to say about how the United States got China so wrong.⁴² He criticizes Graham Allison’s

³⁹Thomas H. Kean and Lee Hamilton, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States*. (Washington, D.C.: National Commission on Terrorist Attacks upon the United States, 2004), 339.

⁴⁰ The White House, *National Security Strategy of the United States of America*, December 2017, 25, <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf>.

⁴¹ Freedman, *The Future of War*, 267.

⁴² One plausible explanation, from H.D.S. Greenway, suggests that the United States was guilty primarily of “wish-casting” or optimistically extrapolating American values. This error predates the late 20th and early 21st centuries. In the mid-19th century, a well-meaning missionary from Tennessee taught the gospel to a young man named Hong Xiuquan. Unfortunately, rather than spreading the Word as intended, Hong became convinced he was the brother of Christ and instigated the long and bloody Taiping Rebellion,

“Thucydides Trap” thesis for its oversimplification of both Greek history and the complex, regional reactions to China’s rise. Yet, he also reviews Allison’s previous prediction — that a nuclear terrorist attack within a decade after 2004 was likely — without discussing the fact that it was completely wrong.⁴³ While Allison was obviously mistaken in 2004, Freedman leaves the reader in the dark as to *why*, thus illustrating my broader desire for more from this book.

Without a clearer discussion of why states and scholars tend to get the future wrong, Freedman’s work offers few practical suggestions for policymakers who are trying to avoid repeating the mistakes of the past. To be fair, the penultimate page briefly discusses three potential reasons the future is so difficult to forecast: 1) predictions are often clouded by advocacy, frequently by envisioning overly-optimistic outcomes; 2) bureaucratic politics can disincentivize thinking about the unthinkable; and 3) organizations tend to extrapolate into the future using the recent past (though as Freedman notes, the inverse is also true: “Another and quite different tendency is to assert that we are on the verge of a great, transformational discontinuity”).⁴⁴ Freedman sums this up with a statement that is true, but in the end, not all that useful:

leaving tens of millions dead. H.D.S. Greenway, “How the United States always ‘gets China wrong,’” *Boston Globe*, Apr. 13, 2018, <https://www.bostonglobe.com/opinion/2018/04/12/how-united-states-always-gets-china-wrong/ianuhEbqtbheIl75Sa2IK/story.html>.

⁴³ Freedman, *The Future of War*, 271-273.

⁴⁴ Freedman, *The Future of War*, 286. Consider the National Intelligence Council (NIC)’s latest *Global Trends* product — an unclassified assessment published every four years to help senior U.S. government leaders understand the global environment over the next two decades — which predicts a near-term transformation of the global landscape. The NIC assessment argues: “The post-Cold War era is giving way to a new strategic context. Recent and future trends will converge during the next 20 years at an unprecedented pace to increase the number and complexity of issues, with several, like cyber attacks, terrorism, or extreme weather, representing risks for imminent disruption.” Director of National

The reason that the future is difficult to predict is that it depends on choices that have yet to be made, including by our governments, in circumstances that remain uncertain ... history is made by people who do not know what is going to happen next.⁴⁵

And yet, much more is known than Freedman acknowledges about how people make choices under certain conditions. As Irving Janis has shown, the psychological drive for consensus and consistency within groups can suppress disagreement and degrade “mental efficiency, reality testing, and moral judgment.”⁴⁶ And, as Risa A. Brooks has argued, poor civil-military relations can corrupt a leader’s advisory system, produce poor strategic assessments, and create an environment in which the state is “devastatingly unprepared to manage [its] international relations.”⁴⁷ Keren Yarhi-Milo has similarly highlighted how problems can emerge from differences within the executive branch, such

Intelligence, *Global Trends: Paradox of Progress* (Washington, DC: National Intelligence Council, January 2017), <https://www.dni.gov/files/documents/nic/GT-Full-Report.pdf>, 7. Similarly, an earlier installment of *Global Trends* argues the international system is becoming more complex as power diffuses and actors multiply. U.S. National Intelligence Council, *Global Trends 2025: A World Transformed* (Office of the Director of National Intelligence, National Intelligence Council, 2008), x-xi. See also U.S. Department of Defense, *The National Military Strategy of the United States of America 2011: Redefining America’s Leadership* (Washington DC: Department of Defense, 2011), 1, 5-6, 16.

⁴⁵ Freedman, *The Future of War*, xvii-xix.

⁴⁶ Due to delusions of invulnerability, belief in the inherent morality of the group’s cause, self-censorship and pressure on dissenters, and the illusion of unanimity, organizations often fail to consider alternative courses of action and employ faulty logic leading to bad decisions and sub-optimal outcomes. Irving L. Janis, *Victims of Groupthink* (New York: Houghton Mifflin, 1972), 9.

⁴⁷ Risa A. Brooks, *Shaping Strategy: the Civil-Military Politics of Strategic Assessment* (Princeton, NJ: Princeton University Press, 2008), 2, 5, 13.

as how the intelligence community favors military capabilities when analyzing adversaries, while presidents base threat perceptions largely on their personal impressions of foreign leaders gained through direct interaction.⁴⁸

The point is that if Freedman's critique of structural realism is correct — he argues that it focuses excessively on system-level variables, such as the distribution of material power, and assumes great powers are rational and respond to system changes in similar ways⁴⁹ — then the key question is what state- and individual-level variables can better explain forecasting failure.⁵⁰ But unfortunately, Freedman never quite gets around to this level of analysis. This is a shame, because he has most of the pieces in place to put together a more practical guide for policymakers.

⁴⁸ Keren Yarhi-Milo, *Knowing the Adversary: Leaders, Intelligence, and Assessment of Intentions in International Relations* (Princeton, NJ: Princeton University Press, 2014).

⁴⁹ See John Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2001); Barry Posen, *The Sources of Military Doctrine: France, Britain and Germany Between the World Wars* (Ithaca: Cornell University Press, 1985), 7-8, 239; Robert Art, *A Grand Strategy for America* (Ithaca: Cornell University Press, 2003); Colin Elman, "Horses for Courses: Why Not Neorealist Theories of Foreign Policy?" *Security Studies* 6, no. 1 (Autumn 1996): 7-5; Kenneth N. Waltz, *Theory of International Politics* (New York: Random House, 1979), 121-122. For a review of the assumption of rationality see David A. Lake, "The State and International Relations," in *The Oxford Handbook of International Relations*, ed. Christian Reus-Smit and Duncan Snidal (New York: Oxford University Press, 2008), 41-61.

⁵⁰ These factors may include but are not limited to regime type, interest groups, bureaucratic politics, and individual presidential leadership style and personality. For a review of this approach, see Richard Rosecrance and Arthur Stein, eds., *The Domestic Bases of Grand Strategy* (Ithaca: Cornell University Press, 1993). See also Graham Allison, "Conceptual Models and the Cuban Missile Crisis," *American Political Science Review* 63 (1969): 689-718.

Conclusion

Perhaps one lesson is that, while studies of the future focus on the salience of science fiction, the role of technology in warfare, or the neat-and-tidy lessons of history, they often miss the mark because they rarely come from regional or language specialists. This is particularly true of official governmental scripts. U.S. military career tracks are rarely optimized to produce regional experts. Even the intelligence and diplomatic communities, which used to produce genuine regional experts like George Kennan (a forecasting success story that does not appear in Freedman's book), often rotate their personnel in an astrategic manner, perpetuating the so-called "mile wide and an inch deep" personnel pathology. This trend was a major concern of the 9/11 Commission, which recommended that the FBI develop a specialized national security workforce of agents, linguists, and analysts "recruited, trained, rewarded, and retained to ensure the development of an institutional culture imbued with a deep expertise in intelligence and national security."⁵¹

Freedman is right to suggest that there is no easy way to script the future, but military and government leaders should explore every option to improve their forecasts. To this end, deep regional and cultural expertise may go a long way. As Susan Glasser wrote about Kennan, "It is because of Kennan's meticulous observations, incisive prose and deep knowledge of the country and its people" that he did not "merely throw up his hands in confusion, or succumb to wishful thinking or fellow-travelerism or any of the other diseases endemic to so much Western writing about the Soviet Union."⁵²

⁵¹Kean and Hamilton, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States*, 425-426.

⁵² Susan B. Glasser, "The Man Who Got Russia Right," *Foreign Policy*, Dec. 23, 2011, <http://foreignpolicy.com/2011/12/23/the-man-who-got-russia-right/>. See also John Lewis Gaddis, *George F. Kennan: An American Life* (New York: Penguin, 2011).

Perhaps this is just a different form of the hubris Freedman describes in the opening of his book. Or perhaps, with a combination of deep cultural and regional expertise, a sense of humility, and a recognition of our individual and bureaucratic biases, these scripts can have happier endings.

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4. Technology, the Economy, and the Future of War

Saku Panditharatne

In his latest book, *The Future of War*, Lawrence Freedman offers an intellectual history of how Americans and Britons have imagined the future of conflict over the past 200 years. Drawing on not only military history but science fiction as well, Freedman's book leads the reader through the many twists and turns of history, demonstrating in each time period which future conflicts were imagined realistically and accurately and which came as a complete surprise.

In the first section of *The Future of War*, Freedman describes how warfare has evolved, beginning in the mid-19th century, through the industrial revolution, and beyond — from isolated battles between trained soldiers during the Napoleonic Wars, to the all-consuming destruction of World War I, to the end of the Cold War. At each stage, Freedman focuses on the types of conflict that accompanied these technological leaps forward, and examines the second- and third-order effects that caught intellectuals and military leaders off guard. He discusses not only the impact of muskets on warfare, but also the less predictable impact of supply chains.

Technological advances come in fits and spurts. Reading *The Future of War* called to mind Carlota Perez's work of economic history, *Technological Revolutions and Financial Capital*.⁵³ Perez lays out a framework for thinking about technology in terms of discrete paradigm shifts, rather than continuous innovation. These paradigm shifts occur between

⁵³ Carlota Perez, *Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages* (Cheltenham, United Kingdom: Edward Elgar, 2003).

clusters of technologies that develop together and mutually reinforce each other, and which naturally lead to a different pattern of social organization. It's an extremely relevant read for today's era of "technological disruption," in which the software paradigm is replacing the 20th century paradigm of mass production. After reading *The Future of War*, I saw a correspondence between Perez's theory about the course of technology and Freedman's account of the predictability of war.

Perez divides economic development into two phases: an "installation" phase, in which a new set of technologies are invented and commercialized, often coinciding with a financial mania or bubble; and a "deployment" phase of steady economic growth, in which the same technologies are rolled out on a broader scale. In between the two phases is a "turning point," when the "new economy" replaces the old, and society is restructured to make the best use of it. Some examples of these two phases of economic development include the canal mania that preceded the industrial revolution, the railway mania that preceded the Victorian boom, and the Roaring Twenties and post-World War II period, when mass production, cars, and aviation were invented and then later rolled out more broadly.

It is during this "installation" phase that people are frequently taken by surprise by new forms of waging war. For example, after the invention of new technologies, such as the automobile and the telephone, the great powers famously "sleepwalked" into World War I. It was hard for European leaders to imagine that the new supply chains bringing resources to the front lines would prolong the length of battles, and even harder for them to predict the emergence of trench warfare. Even though they may not have literally believed the war would be over by Christmas, as many claimed, only a few Cassandras predicted the scale of destruction these new technologies would enable. Many expected a

repeat of the kind of highly contained battles prominent in the previous century — but with machine guns instead of muskets.

In reading *The Future of War*, it became clear the “technological disruption” of warfare often became easier to predict when moving into the “deployment” phase. During the interwar period, a new social and economic structure developed around the emerging technologies that had been invented in the early 20th century. Infrastructure (such as roads and telephone lines) was built out, new management techniques and processes (for example, supply chains) emerged, and people adapted their lifestyles around a new, more centralized and urbanized way of living.

As it became more obvious how these technologies would be incorporated into the economy, it also became more obvious how they would be used in warfare. Although the airplane was still a nascent technology, many science-fiction writers and futurists were able to imagine how war could be waged in the skies prior to the start of World War II. Even the atom bomb was thought up in science fiction before it was invented — in some ways it occupied a similar place in popular culture as the idea of superintelligent Artificial Intelligence (AI) does today. H.G. Wells and others imagined an “infinite energy source,” which some thought might one day make all jobs obsolete.

The end of the Cold War coincided with the end of the deployment phase of the last technological revolution and the start of the computer age. There were many reasons for the collapse of the Soviet Union, but by the late 1980s, the highly centralized mid-century economic model had run its course, making totalitarian states impossible to sustain. The end of this technological paradigm was not easy to predict at all: The view from 1960 was that mankind would explore new planets and the Cold War would continue out in space.

The first half of *The Future of War* is a “history of the future,” a critical look back at how predictions about the military affairs played out. The implicit question Freedman seems to be asking is, “How much can we predict about the future of war today?” Are we living through one of those eras where the second- or third-order effects of warfare are relatively easy to predict, or one where they take the world by surprise? *The Future of War* suggests the answer can be found by looking at the economy, as history teaches that there is a close link between understanding the uses of technology in the economy, and understanding them in warfare.

Predicting War in the Post-Cold War Era

In the second half of Freedman’s book, he examines the new trends in warfare that have emerged since the end of the Cold War. The period between 1989 and 2015 can be seen as the “installation” phase of the information revolution, again using Perez’s terminology, a time when personal computers and the internet were new, experimental technologies. The two big trends to come out of this installation phase are a set of mutually reinforcing technologies — computers, the internet, mobile phones, and AI — and a new set of processes to make best use of these technologies in the economy. As was true in the first half of *The Future of War*, there appear to be strong parallels between the organization of the “new economy” and the new developments in warfare. One can look to competition between tech companies to try to understand the technological advantage one nation-state might gain over another. Such an examination suggests that the advantage comes from having a powerful guiding mission, and possessing networks of technically skilled employees.

One way in which new tech has affected organizational dynamics is by shifting power away from top-down bureaucracies. The post-Cold War period has been defined by a

marked decrease in the power of the nation-state. In *The Square and The Tower*,⁵⁴ Niall Ferguson argues that the internet tipped the balance of power away from large, centralized organizations toward smaller, more networked ones. In a similar way to the advent of the printing press during the Reformation in the 16th century, the internet gave an advantage to smaller groups. Instead of conflicts between highly centralized superpowers, the early 21st century has been defined by conflicts caused by weak states, civil wars, guerilla warfare, and terrorism.

The Future of War describes an especially interesting implication of this more networked type of warfare: It results in the heightened importance of “legitimacy.” For military interventions in the post-Cold War period, winning over local allies has become more crucial because on the ground expertise and information matters more than it used to. There’s an interesting parallel here with what’s happening in the economy, where “mission-driven” companies have an advantage because they are better able to build networks of people and recruit those with important skills. A related phenomenon is the blurring of state and non-state actors. Various organized crime groups, such as drug traffickers, are able to build formidable networks without necessarily having the bureaucratic apparatus of a state, and extremist groups like the Islamic State are able to use their ideology to recruit using online propaganda.

Reading *The Future of War*, I was especially struck by Freedman’s account of the increased importance of soft power in winning over allies. If conflicts are fought between networked organizations and their guiding missions, rather than state bureaucracies, then democracies might be at a disadvantage in this new form of warfare. A dictatorship can

⁵⁴ Niall Ferguson, *The Square and the Tower: Networks, Hierarchies and the Struggle for Global Power* (London, Allen Lane: 2017).

directly create propaganda to promote its party line abroad, for example, whereas there are fewer ideas upon which democracies can agree to promote. On the other hand, it's also possible that the strength of culture and civil society in a democracy is more effective at creating soft power than simple propaganda.

In this light, U.S. internet companies like Facebook and Google become especially important. In 2016, the Indian government decided against allowing Facebook to provide free but limited mobile internet services to rural Indians, partly because it feared giving a foreign corporation too much power over the flow of information.⁵⁵ Many countries already restrict Facebook, most notably China.⁵⁶ Although U.S. internet services are popular with users, and there are strong economic incentives for developing countries not to place restrictions on the internet, it is not difficult to imagine a future where a country's domestic policies about social networks becomes a foreign policy or trade decision. This raises an interesting question: To what extent are U.S. tech companies representative of America and the West abroad?

This question is further complicated by individual tech companies' need for legitimacy as a networked organization. Facebook, for example, cares so much about employees believing in the internal mission that it has a department dedicated to creating internal motivational posters, called the Analog Research Lab art studio.⁵⁷ The opinions of employees are important enough to significantly influence top-level decisions. The crafts

⁵⁵ Rahul Bhatia, "The Inside Story of Facebook's Biggest Setback," *Guardian*, May 12, 2016, <http://www.theguardian.com/technology/2016/may/12/facebook-free-basics-india-zuckerberg>.

⁵⁶ Paul Mozur, "Blocked in China, Facebook Is Said to Seek a Shanghai Office," *New York Times*, Sept. 6, 2017, <http://www.nytimes.com/2017/09/06/technology/facebook-china-shanghai-office.html>.

⁵⁷ Mike Isaac, "Meet Facebook's Secret Propaganda Arm: The Analog Research Lab," *Wired*, May 18, 2012, <http://www.wired.com/2012/05/analog-research-lab/>.

startup Etsy initially went public as a “public benefit corporation,”⁵⁸ meaning it would be legally obligated to hold and prioritize non-financial goals, like helping the environment, in the hopes of making it easier to recruit the people they needed to make the site a success. This is an existential issue for tech companies, which are constantly worried about losing their engineers to startups and other projects with a more compelling “mission.”

Business Parallels with Hybrid Warfare

These trends in technology and organizational dynamics have led to the increasing complexity and hybridization of warfare, much like the increasing complexity in business known as the “knowledge economy.” Hybrid warfare combines hacking and misinformation campaigns with conventional military tactics, which has some parallels with the new generation of tech companies (like Uber) that combine software (e.g., the app itself) with operational knowledge of traditional, brick-and-mortar industries (e.g., driving a taxi). Typically, these kinds of companies need to have both computer scientists and industry domain experts in the organization’s DNA. They often end up acquiring small teams of computer scientists working on specific, relevant problems to grow the business, in a similar way to how nation-states might recruit teams of hackers to work alongside more traditional military and government officials. A related role from industry that does not yet have an analogue in hybrid warfare is the venture capital analyst — someone who is hired to look for important new tech trends and seek out experts and

⁵⁸ Maria Stracqualursi, “The Rise of the Public Benefit Corporation: Considerations for Start-Ups,” *BC LAW LAB*, <http://bclawlab.org/eicblog/2017/3/21/the-rise-of-the-public-benefit-corporation-considerations-for-start-ups>.

promising people working in those fields, in hopes of spotting a high-impact discovery before other firms do.

Another common pattern that could become relevant to nation-states waging hybrid warfare is that of an old-economy business buying a stake in a software company in order to modernize — such as Unilever acquiring Dollar Shave Club.⁵⁹ In these cases, the software company acts like the brain of the jellyfish: It helps the rest of the organization make smarter, more effective decisions. It's often quite difficult for legacy companies to know which software companies to acquire until they have proven themselves in the marketplace, because they lack the expertise to tell which ones are the best. One way they get around this is by building out networks of computer scientists. Highly specialized, domain-specific knowledge most often requires a mentor to learn. Thus, people with relevant skills tend to know each other, and, more importantly, know who the people doing important work in their field are.

Intellectual theft is another domain in which networks have taken on new importance. Industrial espionage was important in the mid 20th century, because specialized technical knowledge was relevant to both military and economic power. With software, stealing secrets has become much more difficult. Simply stealing code is not that valuable without the knowledge and processes to make it useful. In a high-profile 2017 trade secrets legal dispute between Uber and Waymo over the self-driving car,⁶⁰ it was not just that data and plans were allegedly stolen — the supposed theft involved the top engineer leaving to go

⁵⁹ Dan Primack, "Unilever Buys Dollar Shave Club for \$1 Billion," *Fortune*, July 20, 2016,

<http://fortune.com/2016/07/19/unilever-buys-dollar-shave-club-for-1-billion/>.

⁶⁰ Leslie Hook, "Waymo-Uber Trial: What's at Stake?" *Financial Times*, Feb. 4, 2018,

<http://www.ft.com/content/be56451a-0862-11e8-9650-9c0ad2d7c5b5>.

to the other company. Again, the conclusion is the same: Networks of people are of much more critical importance than they used to be.

Conclusion

In *The Future of War*, Freedman examines the historical parallels between developments in warfare and developments in the economy. He demonstrates that the current era is no exception, discussing the new patterns of warfare that have emerged since the start of the information age. Freedman traces the implications of both the first-order effects, such as greater use of information technology, and the higher-order effects, such as the shift towards mission-driven networked organizations.

If history is any guide, the future of war should be more predictable now given that the economic paradigm of how to use information technology is fairly well-understood. Freedman's work suggests there is a lot that can be learned regarding warfare by studying the "new economy," especially the workings of mission-driven, networked organizations. Hybrid warfare should lend an advantage to nations with lots of soft power, which are able to attract and retain top technical talent both in industry and in the military directly, an encouraging conclusion for proponents of liberal democracy.

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5. Faulty Frames and Techno-Optimism

Heather M. Roff

Lawrence Freedman's impressive new work, *The Future of War*, provides a solid, general introduction to a contemporary history of war. Its breadth and scope intertwine not only historical accounting, but international relations theory, film, and literature, bringing to life the sentiments and perspectives of people in their time. Freedman's thesis — that American and British leaders, including politicians and military officers, fail to predict future wars because they lack knowledge of historical precedents and the strategic narratives of past conflicts — is largely correct. And yet, Freedman falls prey to his own critique by failing to examine two extremely important modern conflicts that lay the foundation for many of the present technological advancements and strategic doctrines that continue to shape contemporary thinking on warfare: the Korean and Vietnam Wars.

The Korean War

Freedman's lack of serious engagement with these two conflicts is not only perplexing, but troubling. Indeed, he makes only two brief mentions of the Korean War. The first is in reference to the United States' supposed surprise when North Korea invaded South Korea in 1950. The second is in relation to counting battle casualties. North Korea itself only appears in a few fleeting anecdotes in *The Future of War*, again in reference to the "surprise" of the United States, as well as the notion of delivering a first, "decisive" blow to an enemy, the seizing of the *USS Pueblo*, the hack on the Sony Corporation, and the almost relentless 70-year pursuit of a nuclear weapons program by the North. Yet, it was the Korean War that lay much of the groundwork for many of the present-day foreign policy challenges that face the United States.

If Freedman were following his own advice, he would have looked at the historical context in 1950 to help explain the strategic context on the Korean Peninsula today. Kim Jong Un's grandfather, Kim Il Sung, was educated, trained, and equipped by Josef Stalin. The perception in the United States and elsewhere was that Stalin was making a play to expand communist influence in the East. But what was not appreciated a mere five years after the end of World War II — and after America's use of nuclear weapons — was that Stalin had little appetite for a long and escalatory conflict in Korea.⁶¹ The United States, however, along with many major powers at that time, viewed a military response to North Korean aggression as *required* under the newly formulated United Nations.

Referring to this response as a “police action” gave Western countries, and particularly the United States, expansive new powers. Domestically, it enabled President Harry Truman to bypass congressional approval for going to war against North Korea, thereby challenging the Constitution. This greatly enhanced and expanded U.S. executive powers in ways that have still not been walked back. Internationally, the absence of the Soviet Union at the United Nations Security Council vote on approving this so-called police action meant that the vote went unopposed. Thus, the Security Council's “approval” lent a patina of legitimacy to actions that member states like the Soviet Union and, later, China would have seriously opposed.

The various domestic pressures faced by the Truman administration from 1949 to 1950 — such as outrage at the Soviets acquiring their own atomic weapon and fear of further communist expansion after the successful Chinese revolution — presented Truman with

⁶¹ Gary R. Hess, *Presidential Decisions for War: Korea, Vietnam and the Persian Gulf* (Johns Hopkins University Press, 2001), 14–15.

an opportunity to begin making the Cold War a hot one. Truman's "police action" turned into a full-scale war that ultimately challenged the notion of state sovereignty upheld by the United Nations. Moreover, it also changed how U.S. foreign policy in Southeast Asia was framed — a frame that continues to this day.

The war brought Maoist Chinese forces into North and South Korea to fight U.S. troops. When Gen. Douglas MacArthur's forces were routed, facing defeat at the hands of North Korean and Chinese troops, the response was to escalate the crisis and threaten nuclear action.⁶² To use nuclear weapons as a threat, less than ten years after the technology's first use, was so serious that one can argue it changed the North Korean perception of obtaining nuclear weapons forever. And this perception — this nuclear hangover, so to speak — persists in the Kim dynasty to this day. North Korea pursues nuclear power at all costs because it is that country's greatest defense against a nuclear threat. Yet, without understanding the reasons for North Korean nuclear armament, or its close connections with China, one will have little understanding of present-day potentialities for nuclear brinkmanship or conflict in South East Asia. Contemporary foreign policy and alliances in the region cannot be understood without understanding the past. However, such an analysis is not to be found in Freedman's book. He has failed to take his own advice.

The Vietnam War

The U.S. bombing campaign in Korea marked the first time America employed napalm as a weapon in war, setting the stage for its later use in Vietnam.⁶³ Enter the light treatment of Vietnam in *The Future of War*. As Freedman makes sweeping claims about

⁶² Hess, *Presidential Decisions for War*, 61.

⁶³ Bruce Cummings, *The Korean War: A History* (The Modern Library, 2011), 159.

intervention, failed states, democracy, and counterinsurgency — as his chapter titles exhibit — it is quite surprising that Vietnam does not have a more prominent place in his book. The Vietnam conflict touches on all of these themes. It also cemented a particular cultural narrative about the U.S. use of force for decades. Indeed, the United States feared public opinion about entrenched conflicts, the draft, and insurgency to such an extent that it literally threw away all of the field manuals pertaining to the war, thereby hindering U.S. strategy in 2003, when America faced insurgency once more in Iraq. Again, Freedman has failed to make this connection and take his own advice.

From the perspective of Vietnam, all of these topics play a crucial role in explaining the conflict and providing historical context for future strategic narratives. As early as 1919, the Vietnamese people were asking the United States to help them gain recognition from French colonialists.⁶⁴ In his first attempt at negotiating with the French, Ho Chi Minh approached President Woodrow Wilson to use his 14 Points Speech to help the Vietnamese gain a “permanent delegation of native people elected to the French Parliament.”⁶⁵ Ho wouldn’t return to fight again for independence until 1941.

The roots of the Vietnam War did not grow out of a red scare or fear about falling dominoes. All of that came later. This war was about an ongoing struggle against colonialism, brutal treatment at the hands of the French colonialists, and the fight for democratic representation. Ultimately, Truman’s lack of interest in Indo-China and the Far East, as well as French and British reticence to give up their colonies or tolerate nationalist movements, led to policies toward Vietnam that only further inflamed the Vietnamese population’s drive to fight back against the French. Ultimately, over time,

⁶⁴ Jeffery Ward and Ken Burns, *The Vietnam War: An Intimate History* (Alfred A. Knopf, 2017), 3.

⁶⁵ Ward and Burns, *The Vietnam War*, 3.

communism came to the fore, but not before attempts at decolonization and a fight for independence.

Truman had sent military advisers to his French allies in Vietnam as early as 1950, but it wasn't until the French defeat at Dien Bien Phu, in 1954, that the United States began to pay much closer attention to what was happening there. It was at this point, with the new Eisenhower administration in office, that U.S. involvement became almost a forgone conclusion. It was with Dwight Eisenhower and his new policies, geared toward amassing nuclear weapons, purging communist elements, and expanding the Central Intelligence Agency, that the conflict began to take on a new significance.

It is important to note the history of the United States and its Western allies with regards to Vietnam's nationalist movement and civil war. America's installment of a U.S. friendly leader, Ngo Dinh Diem, undermined confidence in the eventual unification or democratic aspirations of North and South Vietnam. Truman's, and then Eisenhower's, fears of communism provided both presidents with faulty foreign policy decision-making frames that ultimately committed them to actions that would only escalate and heighten the situation. Given the significance of such frames, Freedman ought to have identified this example from history as evidence to support his thesis.

With Eisenhower's New Look nuclear policy and hawkish attitudes, potential first use of atomic weapons was on the table. However, by the time John F. Kennedy came into office, he was neither fully aware of the U.S. nuclear capability — ordering Secretary of Defense Robert McNamara to actually count the U.S. arsenal — nor was he aware of how

America's involvement in Vietnam was truly playing out.⁶⁶ He essentially remained committed to Eisenhower's policies until 1963, when Kennedy announced his plan to withdraw all U.S. troops by 1965.

Kennedy's commitment to leaving Vietnam was not popular at that time with military leaders. Upon his assassination, and the appointment of Lyndon B. Johnson to the presidency, the Vietnam War entered its most important phase for the history of war and for the future of war with regard to technological development. Johnson's commitment to more right-leaning and hawkish policies led him to appoint Gen. William Westmoreland and to increasingly rely on the advice of former-President Eisenhower.⁶⁷ Westmoreland's strategy for winning the war was to continuously increase the number of ground troops and bombing campaigns. Indeed, he escalated the troop commitment from 16,000 in 1963 to over 536,000 in 1968.⁶⁸ While the massive troop deployments and the political opposition raged on, another important aspect of this war came to the fore: technological development.

Technology and the Future of War

One of the themes that Freedman explores in his book is the role of technological development in predicting the future of warfare. One must, therefore, look to the strategic narratives that drove technological development and that frame present-day narratives

⁶⁶ Historical Office, "Robert McNamara," United States Office of the Secretary of Defense, <http://history.defense.gov/Multimedia/Biographies/Article-View/Article/571271/robert-s-mcnamara/>

⁶⁷ Hess, *Presidential Decisions for War*, 134, 93.

⁶⁸ "Vietnam War Allied Troop Levels 1960-73," American War Library, <https://www.americanwarlibrary.com/vietnam/vwatl.htm>.

for the future of war. In the 1960s, one such narrative came to fruition in one of Eisenhower's defense initiatives: the Advanced Research Projects Agency (ARPA).

ARPA's delivery of high-tech, useful technologies combined with the United States' faulty frame of decriing the "communist threat" in Vietnam meant that Washington continually believed that advanced technology and overwhelming force could ensure a victory.⁶⁹ Founded in 1958, ARPA (later adding a "D" for "Defense") continually put its best talent toward providing technological solutions to the conflict at hand. In 1961, for example, (D)ARPA's Project Agile was designated for "counterinsurgency research programs in Southeast Asia." This 13 year-long project included "flamethrowers, the M-16 assault rifle, communications, surveillance, target acquisition, defoliation and psychological warfare."⁷⁰ Likewise, (D)ARPA worked on surveillance aircraft, and ultimately stealth technologies, as well as advanced sensors to populate the Southeast Asian jungle.⁷¹

Much of the sensor, computing, and command and control architecture built in advanced U.S. military laboratories during the Vietnam War continues to push present-day militaries in particular directions. Take, for instance, Gen. Westmoreland's vision of battle in 1970:

⁶⁹ "Infographic: The Vietnam War: Military Statistics," The Gilder Lehrman Institute of American History, <https://www.gilderlehrman.org/content/infographic-vietnam-war-military-statistics>.

⁷⁰ "History and Timeline," Defense Advanced Research Projects Agency, <https://www.darpa.mil/about-us/darpa-history-and-timeline?PP=1>.

⁷¹ Matt Novak, "How the Vietnam War Brought High-Tech Border Surveillance to America" *Gizmodo*, September 15, 2015, <https://paleofuture.gizmodo.com/how-the-vietnam-war-brought-high-tech-border-surveillan-1694647526>.

On the battlefield of the future, enemy forces will be located, tracked, and targeted almost instantaneously through the use of data links, computer-assisted intelligence evaluation, and automated fire control. ... I am confident [that] the American people expect this country to take full advantage of its technology—to welcome and applaud the developments that *will replace wherever possible the man with the machine* [*emphasis added*].⁷²

This is exactly the future of war that was realized not only in the 1991 Gulf War, but in the strategy doctrines of current and past secretaries of defense in the Third Offset Strategy. As former Deputy Secretary of Defense Robert Work remarked, “I’m telling you right now, 10 years from now if the first person through a breach isn’t a friggin’ robot, shame on us.”⁷³

The lessons from the Korean and Vietnam Wars cannot be overstated. Rigid frames of thinking, as well as the belief that technology and air power would bring conflicts to a quick end, continue to plague U.S. and Western thinking about how to wage war. Past histories of colonialism and nationalism, as well as counterinsurgencies and the fear of Western occupation, still drive many of the beliefs and tactics used by contemporary U.S. adversaries. That the United States and the United Kingdom continue to believe that technology will save them from long, entrenched, and bitter war indicates that they lack deep, strategic thinking. Yet, Freedman cannot actually make this case. He fails to link

⁷² Gene I. Rochlin, *Trapped in the Net: The Unanticipated Consequences of Computerization* (Princeton: Princeton University Press, 2012), 200.

⁷³ Cheryl Pellerin, “Work: Human-Machine Teaming Represents Defense Technology Future,” *DoD News*, Nov. 8, 2015, <https://www.defense.gov/News/Article/Article/628154/work-human-machine-teaming-represents-defense-technology-future/>.

appropriately the end of World War II and the start of the Iraq War in 1991. Without taking account of the strategic rationale of the United States and its allies in Southeast Asia — and the way in which the United States fought these wars and developed technology in order to fight specific kinds of tactical challenges within these conflicts — it is impossible to explain why America and its allies fought the way they did in 1991, or how it is that they failed, and continue to fail, in Afghanistan.

This doctrine of “technology saves” has long blinded Western powers. It did not save hundreds of thousands of American lives, or millions of Vietnamese lives, in Vietnam. This is because technology is not value-neutral. It is created for a purpose and a task. Depending upon the task at hand, the ways in which technologies are viewed and used become refined. Thus, the present U.S. Third Offset Strategy, with its focus on artificial intelligence, robotics, advanced materials, and mass over-precision, is indicative of the way the United States looks at how to profitably fight wars against potential adversaries — never mind the countless enabling technologies required for this vision to work, or the belief that one’s adversaries will be equally matched in quality and number.

Conclusion

If Korea and Vietnam are to provide any lesson, it is that the causes of war provide ample evidence as to how a war ought — or ought not — to be fought. U.S. and allied defeats by the Maoist Chinese forces — forces that were technologically underdeveloped — surprised the United States. However, that surprise was not taken as evidence that technology and tactics needed to change. Instead, it entrenched the view that “there just isn’t enough” of it. Yet again, Freedman fails to examine this case, and by failing to examine it he restricts his own ability to make claims about the future of war. If he

believes his own thesis, then he ought to unpack the strategic narratives that unfolded between 1950 and 1990 that he so glaringly omits in his latest book.

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