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Riskless War: Technology, Coercive Diplomacy, and the Lure of Limited War

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Just when critics have consigned the Revolution in Military Affairs and Transformation to the dustbin of clichéd phrases, a fresh buzz of excitement is stirring among technophiles. Admiral Arthur Cebrowski and his evangelists of network-centric warfare failed to come to grips with the realities of small wars, counterinsurgency, and urban warfare, but a younger cadre of writers, operators, and analysts is emerging who insist that we are indeed in the midst of a Revolution in Military Affairs, only one that centers on robots, unmanned vehicles, and artificial intelligence. They claim that unmanned systems and robots are changing the calculus of war, and will allow the United States to threaten military intervention and the use of force without substantial risk to ourselves. Peter Singer of the Brookings Institution speaks of a “robotics revolution” and claims that “...At their fundamental level, all the past RMAs in history were about changing how wars were fought....By contrast, the introduction of unmanned systems to the battlefield doesn’t change simply how we fight, but for the first time changes who fights at the most fundamental level.”ⁱ In *Wired for War*, excerpts of which were published in *Joint Force Quarterly*, Singer cites a growing chorus of analysts and operators who believe that robots play to America’s strength, and will enable the United States military to exert relentless, terrifying pressure on its enemies. These enthusiasts contend that robotic and unmanned systems will reduce casualties, and free soldiers, sailors, and airmen from performing dull, dirty, or dangerous tasks. Addressing the broader American public, the technology columnist of the *Washington Times* explains that “Robotic weapons are expendable... With an unmanned plane, if it doesn’t come back, you just order another one. This will be especially true of remotely controlled ‘soldiers’ consisting perhaps of the equivalent of a riding lawn mower, a video camera, and a rocket launcher or gun. You could send one into the most dangerous street in Iraq with no concern for its safety.”ⁱⁱ

Few analysts dispute that robots and unmanned aerial and ground systems have already proven very useful at the tactical level, performing the *dangerous* jobs of IED disposal, minesweeping, and tactical reconnaissance; the *dirty* tasks of chemical and radiation detection; and the *dull* duties of aerial reconnaissance, surveillance and presence. Unmanned aerial vehicles such as the Reaper and Predator have rendered valuable support to ground troops engaged in urban combat, and are threatening to displace manned aircraft as the premier providers of air to ground “kinetic action” against insurgents and terrorists.ⁱⁱⁱ Their growing effectiveness at the tactical level has led some to conclude that these systems will have a dramatic impact at the strategic level of war in the medium term future, as unmanned systems and robots become increasingly sophisticated and mainstream. The most enthusiastic visionaries proclaim that in the not so distant future, the

United States will be able to wage remote-controlled wars entailing little risk to its military personnel or citizens. Wars, in the words of Peter Singer, will become a matter of “playing God from afar, just with unmanned weapon systems substituting for thunderbolts.”^{iv} A writer for *Harper’s*, describing the “The Coming Robot Army,” predicts that “Within our lifetime, robots will give us the ability to wage war without committing ourselves to the human cost of actually fighting a war.”^v

Will robots, UAVs and precision-guided munitions be as strategically effective as their advocates proclaim? Do they provide a future, high tech solution to the challenges of small wars? More specifically, will technological dominance enable the United States to threaten and wage limited wars that compel the enemy to do our will, as the more exuberant unmanned and robotic system advocates assert? The historic record indicates that even in times of technological disparity, the promise of waging war from afar was elusive and uncertain. In the 19th century, Britain, France, Germany, and the United States sought to browbeat recalcitrant Africans, Asians, and South Americans by means of naval blockades and bombardments. The accomplishments were mixed. In the 1920s and 1930s, the Royal Air Force claimed that airpower could substitute for costly ground expeditions in policing colonial possessions and putting down insurrections. “Air policing” saved the RAF as an independent service, but securing Iraq, Palestine, Egypt, and other areas required ground troops. Lastly, after the disappointing results of the coercive air campaign against Vietnam during the 1960s, a number of US diplomats and military leaders posited that precision guided munitions, stealth technology, and the changed international environment of the 1990s had reestablished American airpower as the ideal instrument for minimal risk coercive diplomacy. Operation Allied Force succeeded in forcing Milosevic to halt his activities in Kosovo, but only after the threat of ground invasion became a distinct possibility. In short, even when technological dominance enables advanced states to use force against others with minimal risk to their militaries or public, coercive diplomacy and limited war is often less effective and more costly than anticipated.

Clearly, the sophisticated unmanned and robotic systems of the twenty-first century have little in common with the propeller-driven biplanes of the 1920s and 1930s or the steam powered gunboats of the nineteenth century. But the rhetoric describing the tactical and operational effects of these technologies is strikingly similar. In 2005, a columnist for the *Washington Times* claimed that “soldiers will often fight against heavy odds if they have a chance to kill their attackers. Being blown up by machines controlled from afar is dispiriting.” In 1926, a Royal Engineer asserted in the *Journal of the Royal United Service Institution* that aircraft have “a tremendous moral effect due to the demoralization engendered in the tribesman by his feelings of helplessness and his inability to reply effectively to the attack. Many tribes which would be prepared to endure heavy casualties in man-to-man fighting, will surrender almost at once on the appearance of air forces.”^{vi} Undoubtedly, an earlier generation would correctly have asserted that watching one’s forts and ports crumble was daunting to those subjected to naval gunnery. More importantly, the logic behind the claim that these technologies have a strategic effect remains the same: states with the ability to inflict force from afar can leverage this ability diplomatically, and when diplomatic coercion fails, wage limited war at little or no cost to themselves.

A careful look at the accomplishments of gunboat diplomacy and air policing suggests that the success of coercive diplomacy and the limited use of force had less to do with technological

disparity than it did with the political issues in contention. Coercion, used in the sense of the threat and use of limited force, occasionally worked when the coerced party concluded that the issue at contest was worth only limited expenditures of blood and money. Yet when the political objective was of importance, the ability to strike from afar at minimal cost usually failed to “compel the enemy to do our will.” Coercion became war, with its inherent unpredictability and tendency to escalate. Limited war from afar morphed into more substantial and costly interventions, occupations, and small wars.

The Era of “Gunboat Diplomacy”

A host of technologies emerged in the nineteenth century that transformed the patterns of warfare, from the use of railroads to the advent of the telegraph, from the mass introduction of rifled small arms to the development of the machine guns and quick action artillery.^{vii} On land and at sea, the narrow technological lead that had separated Western militaries from those they encountered elsewhere steadily widened, leading British poet and writer Hilaire Belloc to exclaim in 1898 that “Whatever happens, we have got, the Maxim gun, and they have not.” Yet it was particularly in the area of naval technology that the West developed a decided advantage, with the term “gunboat diplomacy” becoming shorthand for Western coercive diplomacy and the limited use of force against less technologically developed societies.

Western powers already had a critical technological advantage over Ottoman, Arab, Indian, and Chinese navies at the start of the nineteenth century, but naval superiority did not automatically translate into increased diplomatic coercion. The challenge of persuading the rulers of Algiers, Tunis, and Tripoli to abandon their long established patterns of raiding, piracy, and slave trading (particularly galling to the West as the slaves included white Christians) illustrates this point. Muslim corsair pirates operating out of the Barbary states of North Africa had long been the bane of Western merchants engaged in the Mediterranean trade, but Western efforts to suppress the practice had been unsuccessful during the eighteenth century. At the start of the nineteenth century, the harbor fortifications guarding Algiers, Tunis, and Tripoli remained a formidable challenge to sailing warships. Compelling the Deys of Algiers, Tunis, and Tripoli to abandon their habits of piracy and slave trading, and deterring them from resuming these practices required a major commitment of force. Commodore Stephen Decatur’s 1815 expedition gathered together most of the striking power of the young United States Navy, including the frigates *Guerriere* (50 guns), *Macedonian* (38 guns), and *Constellation* (36 guns) along with seven smaller vessels. Even so, the threat of force proved insufficient to bring the Dey of Algiers to terms. Only after the capture of the Dey’s flagship and an Algerian brig did the Dey reluctantly agree to cease preying on American shipping. When other nations sought similar terms, they too found that coercive diplomacy required more than threats: coercion required an nine hour bombardment of Algiers in 1816 by an Anglo-Dutch fleet of six ships of the line, nine frigates, and assorted sloops, gunboats, and smaller vessel before the Dey of Algiers was persuaded to free Westerners he had seized and abandon piracy as a revenue stream. The British and Dutch suffered over 800 killed and wounded in the action, with most of the Algerian corsair fleet sunk and an unknown number of casualties inflicted in the city itself.^{viii}

Conforming more closely to the image of “gunboat diplomacy” as an effective form of coercive diplomacy and limited military intervention were the British naval operations during the Opium

War of 1839-42, Commodore Matthew Perry's opening of Japan in 1854, and the "Don Pacifico" affair of 1850. In the first case, British iron-hulled, steam-propelled gunboats mounting heavy pivoted guns battered Chinese forts around Canton, along the coast, and up the Yangtze river into submission at little cost to themselves, while in the second case, the mere threat of similar actions by Perry's "black ships" (the three side-wheeled, steam-powered warships that constituted the core of his force) persuaded the Japanese to open the ports of Shimoda and Hadodate to US trade. Perhaps the best example of low-risk yet effective "gunboat diplomacy" was Britain's use of its navy to extract reparations from the Greek government after mobs plundered the home of a British citizen, a Gibraltar-born Portuguese trader named David Pacifico. Infuriated by the Greek government's refusal to punish ringleaders or to pay for damages, the Palmerston government ordered the Royal Navy into the Aegean, authorized it to seize Greek ships and property, and blockaded the port of Piraeus in 1850. Utterly unable to contest Britain's blockade, the Greek government came to terms after two months.^{ix}

The apparent ability of West to intimidate others and if necessary, to use force at little cost to itself, made naval power, whether in terms of first rate battleships or lowly gunboats, the favored instrument of power. In 1858, for example, British officials and merchants requested naval support in locales as scattered as "New Zealand, Jamaica, Panama, the Kooria Moorla Islands, Honduras, Siam, Brazil, Sarawak, Alexandria, Vancouver, Vera Cruz, Morocco, and the fishing grounds off Newfoundland."^x The combination of steam power, iron (later steel) construction, and exploding shells accelerated the West's lead in naval technology, accentuating Western dominance at sea while reducing the effectiveness of traditional coastal fortifications.

American observers took note of the flexibility of "gunboat diplomacy," and during the 1880s the United States began to replace its outmoded post-Civil war wooden ships with a new generation of steel-plated, modern warships, the so-called ABCD ships (the *Atlanta*, *Boston*, *Chicago*, and *Dolphin*). Commodore Robert Shufelt sold the new steel navy to Congressman Morse of the House Naval Affairs Committee in terms of its utility in forcibly opening new trading opportunities:

In pursuit of new channels the trader seeks not only unfrequented paths upon the ocean, but the unfrequented ports of the world. He needs the constant protection of the flag and the gun. He deals with barbarous tribes – with men who appreciate only the argument of physical force....The man-of-war precedes the merchantman and impresses rude people with the sense of the power of the flag which covers the one and the other.^{xi}

As American naval power increased, US diplomats and businessmen increasingly requested that naval power serve as a backstop to negotiations with South and Central American governments. Alarmed when Britain and Germany applied the same rationale in the Caribbean, shelling and blockading Venezuelan ports (1902-1903) in order to pressure the Caracas government to pay its debts, Teddy Roosevelt added a corollary to the Monroe Doctrine. Henceforth, Roosevelt stated in his 1904 State of the Union Address, the United States would exercise international police power in the Western hemisphere in cases where "chronic wrongdoing, or an impotence which results in a general loosening of the ties of civilized society" required intervention.^{xii} Over the course of the next twenty years, the US would intervene in Panama, the Dominican Republic,

Mexico, Nicaragua, and Haiti. Gunboat diplomacy slipped easily into prolonged military occupations in four out of five of these cases.

Max Boot's *The Savage Wars of Peace: Small Wars and the Rise of American Power* reminds us that these interventions were neither cheap, quick, nor bloodless. In many cases, what began as an exercise in coercive diplomacy, a blockade, or a demonstration of force (usually the destruction of a coastal fort or the sinking of ships) metastasized into a bloody, protracted "small war." A closer look at the gunboat interventions of the nineteenth century reveals that the quick, painless (from the Western perspective) gunboat diplomacy of the Opium War, of the "Don Pacifico" genre, and of Commodore Perry in Japan proved the exception rather than the rule. Much more frequently, one discovers that coercive diplomacy and limited shows of force escalated into substantial commitments of military power. The bombardment of Da Nang in 1847 by two French warships, an action ostensibly taken to gain the release of French missionaries, achieved little other than to provide the rationale for the larger intervention a decade later that led to the French acquisition of Cochinchina (southern Vietnam). The appointment of a French admiral as its first governor illustrates how gunboat diplomacy all too often merged with the new imperialism of the late nineteenth century. Yet even in cases where annexation was not the objective of the intervener, one notes that gunboat diplomacy usually required more force, treasure, and bloodshed than we now remember. Commodore Perry may have opened Japan to trade in 1854, but keeping the door open required the combined intervention of nine British, three French, and five Dutch warships along with a US chartered steamer in 1864. Only after subduing the Chosu clan that controlled the Shimonoseki straits did the door stay open, with the limited use of force generating a reaction that toppled the shogunate and launched the Meiji Restoration. A close examination of "gunboat diplomacy" reveals that the ability to shell ports, coastlines, and enemy shipping with impunity failed to achieve the desired political effects as often as not. Coercive diplomacy and limited violence worked best when the issues at hand did not affect core interests, when the targeted party had little popular backing, and when diplomacy and intervention did not aim at regime change.

Air Policing and Coercion in the Interwar Period, 1919-1939

Gunboat diplomacy persisted into the interwar years and through the Cold War, with the British scholar and diplomat James Cable listing over 250 cases of threatened or limited use of naval force in his groundbreaking *Gunboat Diplomacy 1919-1991*.^{xiii} Yet following the First World War, advocates of a newer technology, the airplane, claimed that airpower had displaced sea power as the premiere tool of coercive diplomacy and limited war. Much attention has been lavished on the extravagant claims of Giulio Douhet and Alexander De Seversky, who argued that major wars could be won by the application of airpower alone. But it was as a tool of coercive diplomacy and limited war that Winston Churchill and Hugh Trenchard justified the continued existence of an independent Royal Air Force during the 1920s.

Churchill, Secretary of State for War and Secretary of State for Air from 1919-1921, and Trenchard, Chief of the Air Staff throughout the 1920s, argued that substantial savings could be had by drawing down the large British garrisons in Iraq, Palestine, and other newly acquired mandates, and substituting airpower as Britain's military instrument of coercion. Given Britain's strained post-war finances and its increased global commitments, Churchill and Trenchard

asserted that by substituting airpower for ground power, Britain would be able to police its empire at a fraction of the cost entailed by stationing ground troops at hot spots and along the most tenuous frontiers of the Empire. Wing Commander Chamier explained the concept to a mixed audience of army, air force, and naval officers in January 1921. By substituting ten squadrons of aircraft, Chamier claimed that the existing garrison in Mesopotamia might be reduced from 47,000 fighting men to 7,900 soldiers, saving the British taxpayer some 20,000 pounds a year. Britain would use its airpower to coerce recalcitrant tribesmen and threatening neighbors, issuing warnings first but if these failed, administering punishment “with all its might and in the proper manner.” The proper manner, per Chamier, was to select the “most inaccessible village of the most prominent tribe” in rebellion, and then attack with bombs and machine guns in a relentless and unrelenting fashion “carried out by day and night, on houses, inhabitants, crops and cattle.”^{xiv} Submission would soon follow, and “at such a small cost in money and lives that no real comparison can be made with what would result from a similar punishment carried out by a military expedition.”

Churchill was an enthusiastic advocate of “air control,” shepherding the concept through the Cairo conference of British Middle Eastern authorities (March 1921), past various committees examining post-war defense structures, and eventually securing Cabinet approval of the concept. In October 1922, a Royal Air Force officer was appointed as senior officer in Iraq, assuming command over all imperial forces. Air Marshal John Salmond, the Air Officer Commanding from 1922-24, would later recall that Kurdistan had been wrested from the Turk and control imposed on the tribes of the interior at the “expense of one casualty – dead – to our side.”^{xv} As for savings to the Exchequer, British expenditures fell from 23.36 million pounds in 1921-22 to 7.81 million pounds in 1921-23.^{xvi}

The RAF pronounced the experiment in air control a great success and a vindication of the need for an independent air force, emphasizing how air control saved lives and saved money. But as historian James Corum explains, British Indian army forces – paid by the taxpayers of British India – remained in Iraq, and much of the savings derived from shifting the burden of occupation to Indian troops, local levies, and the British-sponsored client Arab monarchies. Surveying the broad accomplishments of RAF air control during the interwar period, Corum reminds us that when violence broke out anew in 1923, the RAF bombed Suliamania for months to little effect, with Kurdistan only secured following a joint ground-air campaign. Looking more broadly at the accomplishments of air control throughout the Empire, Corum concludes that “air control by itself seems to have had only very temporary effects. A tribe would steal cattle or raid a police outpost, get bombed, desist, and then the whole cycle would repeat itself in the next year or so. The RAF itself could handle only the smallest rebellions....”^{xvii}

Military officers of the time felt torn between expounding on the promise of air control as a concept, and conceding that it might fall short of achieving its political purpose. Captain Glubb of the Royal Engineers, writing about the punitive uses of air and ground forces in 1926, exclaimed that refractory tribesmen could be attacked and defeated “in five or six hours,” and if recalcitrant, round the clock bombing of their towns and villages would surely convince them to surrender.^{xviii} After initially enthusing about the promise of air control, Glubb conceded that “it may be impossible to obtain a decision by aircraft alone,” especially when faced with determined, disciplined “peoples either actuated by some deeper motive for resistance, such as

religious fanaticism or supported by exterior propaganda or even gifts of arms and money from outside.”^{xxix} Air Commodore Arthur Harris, commanding RAF officer in Palestine in the late 1930s, firmly believed that Arab unrest would cease once Britain applied “the heavy hand” and dropped “one 250 pound or 500 pound bomb in each village that speaks out of turn.” His army colleagues and the civil authority were not so sure, and turned down Harris’ offer to implement air control in a dense, urban environment. Unlike Glubb, Harris rejected the idea that airpower alone could not crush a determined and motivated opponent. His response to the disappointing initial results of the RAF’s strategic bombing campaign against Germany was to build more and better bombers, and to radically increase the level of death and destruction that Bomber Command could inflict.^{xx}

The British concept of air control and policing best articulated the interwar confidence of RAF airmen that technology would enable the Empire to coerce rebellious natives at a significantly lower cost to itself in blood and treasure. In Iraq, Somaliland, and the Northwest frontier, the RAF contributed to maintaining Britain’s hold while lessening costs to the Exchequer’s strained finances, though airpower alone seldom sufficed. An examination of French, Spanish, and Italian uses of airpower during the interwar years reveals how limited it was as a tool of coercive diplomacy and limited war. Neither the use of aerially delivered explosive bombs nor the lavish use of poison gas caused Abd el Krim in Morocco, the Druze in Syria, the Sanussi in Libya, or the soldiers of independent Abyssinia to surrender. Instead, France, Spain, and Italy had to commit tens of thousands of ground troops to overpower opponents lacking effective defenses against air attacks.^{xxi} Much like “gunboat diplomacy,” coercive airpower was generally unable to control territory in the absence of ground troops. This would become abundantly clear after World War II, when the French and British had complete command of the air over Indochina, Malaya, Kenya, and Algeria but were unable to simply fight wars from a distance using their technological dominance of the air and sea domains. Instead, when resolute insurgents contested British and French control of these territories, the colonial powers were confronted with the prospect of fighting costly, prolonged “limited wars” against opponents willing to fight wars of an unlimited nature. Corbett, channeling Clausewitz, had emphasized this concept some fifty years earlier. Wars where “the political object was of so vital an importance to both belligerents that they would tend to fight to the utmost of their endurance” are unlimited while wars where the “object was of less importance, that is to say, where its value to one or both the belligerents was not so great as to be worth unlimited sacrifices of blood and treasure” are limited.^{xxii} The tools of “gunboat diplomacy” and air control fell short when the coerced party had a less restrictive view on the limited nature of the conflict than the coercer.

Conclusion: Coercion, Technology, and the Nature of War

Decolonialization and the Cold War led many to conclude that the era of “gunboat diplomacy” and air control had passed. The ability of nationalist insurgents to challenge and defeat their colonial masters, coupled with the extension of Cold War client relationships from Europe to Asia, the Middle East, and Africa, made intervention costly and intimidation difficult. France, Britain, and the United States discovered that translating their naval and air supremacy into the desired political outcome proved difficult when confronted with determined, adaptive opponents waging wars of insurgency. The strategic air campaigns over North Korea and North Vietnam had more in common with the Combined Bomber Offensive over Germany than they had with

interwar air policing, in that Korean, Vietnamese and Soviet pilots, anti-air guns, and surface to air missiles contested the passage of US bombers and exacted a toll of killed, injured, and captured airman. Disappointment over the results of “graduated escalation” against North Vietnam rendered a generation of military officers allergic to the concept of coercion, with the Weinberger Doctrine of the 1980s epitomizing skepticism over the limited use of force. The US should only commit military forces, per Secretary of Defence Caspar Weinberger, when vital interests were at stake, as a last resort, and with the clear intention of winning. General Colin Powell would later elaborate that once the decision had been made to go to war, the force committed should be large enough to secure a rapid, decisive victory.

Three factors reinvigorated interest and confidence in coercive airpower in the 1990s. First, the efficacy of US military hardware during Desert Storm suggested that stealth technology and electronic countermeasures rendered enemy air defense systems vulnerable, enabling US airpower to penetrate the air defenses of even well-equipped regional states. Secondly, the end of the Cold War and the demise of the Soviet Union changed the political dimensions of limited war. Former Soviet clients no longer enjoyed the explicit or implicit protection of a superpower, reducing the risk that limited interventions might escalate to a confrontation between superpowers. Lastly, Desert Storm revived interest within the United States Air Force in the non-nuclear strategic uses of airpower. John Warden’s concepts of the enemy of as a system, of parallel attacks, and of strategic paralysis captured the imagination of a younger generation of Air Force officers, with AirLand Battle concepts denigrated as Cold War relicts.

The heady combination of risk-minimizing technologies, a permissive international environment, and air strategies that promised to render the enemy helpless resurrected confidence in airpower as an effective tool for coercive diplomacy. Growing outrage over the massacre of civilians and the shelling of safe havens in Bosnia, coupled with the apparent failure of economic sanctions and the inability of the EU and the UN to broker peace, convinced the Clinton administration that NATO would have to coerce the Bosnian Serbs by applying limited force. The quick success of Operation Deliberate Force (30 August – September 20, 1995), a three week air campaign directed against Bosnian Serb military targets, seemed to substantiate the concept of coercive airpower. That winter, airpower theorist Carl Builder pushed the doctrinal frontiers and called new equipment and doctrine for what he called a “constabulary role for air and space power.”^{xxiii} The concept was old wine in new bottles, updating Trenchard’s interwar notion of air control while shedding its unsavory colonial connections.

Operation Deliberate Force lulled NATO’s political and military leaders into assuming that coercive diplomacy would prove equally effective in compelling Milosevic to return to the stalled Rambouillet peace talks addressing the deteriorating situation in the Serbian autonomous province of Kosovo. NATO’s leaders assumed that the threat of force would be a tonic to diplomacy, and if threatening force failed, that a short demonstration of force would be sufficient. After interviewing dozens of principles, Dr. Dag Henriksen concludes that NATO lacked both a clear definition of its political objectives and consequently had no military strategy for achieving those objectives once diplomatic coercion gave way to limited war. Lieutenant General Michael Short, Commander of Air Forces in Southern Europe, bluntly shared the following observation with Henriksen: at the start of Allied Force, “we had no strategy because

three nights of demonstrations of resolve does not require a strategy.”^{xxiv} The targeting cell at the CAOC in Vicenza was simply told to find “three days worth of good targets.”

Allied Force proved frustrating and divisive, and served as a reminder the coercive diplomacy can easily drift into limited war. Subsequent campaigns in Afghanistan and Iraq, not to mention Israel’s 2006 and 2008 forays into Lebanon and the Gaza strip, have taken a toll on the concept of airpower as a stand-alone coercive instrument. Captain Glubb of the Royal Engineers may have been on to something when he concluded some eighty years ago that “it may be impossible to obtain a decision by aircraft alone.” This by no means denigrates the contributions of airpower to the joint fight, with airpower serving as our ace in conventional warfare and as an indispensable aid in small wars and counterinsurgencies. But those who reach too readily for the “big stick” of military force should remember that control is only one element of Clausewitz’ paradoxical trinity. The other two elements, chance and violence, exert the same unpredictable influence in “coercive uses of force” as they do in war.

The introduction of new technologies can indeed revolutionize warfare, and undoubtedly unmanned combat systems and robots will play an increasingly important role on the battlefield of tomorrow. Yet a glance backwards reveals that fighting riskless wars from afar is a chimera when faced with a resolute, adaptive, and intelligent foe. The British inventor, science fiction writer, and futurist Arthur C. Clarke claimed that “Any sufficiently advanced technology is indistinguishable from magic.”^{xxv} The volleys of naval gunships, the attacks of RAF biplanes, and the precision bombs of the US Air Force undoubtedly demoralized and distressed their opponents. No doubt robots and unmanned combat systems will discourage our opponents and minimize our losses. But betting that the latest iteration of revolutionary technology will magically compel a resolute enemy to come to terms is unwise. Thinking opponents have a way of unmasking magic and bedeviling the best laid plans for riskless war.

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ⁱ P. W. Singer, *Wired for War: The Robotics Revolution and Conflict in the Twenty-first Century* (New York: Penguin Press, 2009). An excerpt of the book appeared in *Joint Forces Quarterly*, Issue 52, 1st Quarter 2009, 104-111.

ⁱⁱ Fred Reed, "Robotic Warfare Drawing Nearer," *Washington Times*, February 10 2005.

ⁱⁱⁱ See 60 Minutes (CBS) broadcast (10 May 2009) of "America's New Air Force" for an example of this exuberant faith in technological solutions to small wars. Transcript available at CBS News, <http://www.cbsnews.com/stories/2009/05/08/60minutes/main5001439.shtml> (accessed 11 May 2009)

^{iv} Singer, *Wired for War*, 324.

^v Steve Featherstone, "The Coming Robot Army," *Harper's Magazine* 314, no. 1881 (2007).

^{vi} Reed, "Robotic Warfare Drawing Nearer," *Washington Times*, February 10 2005; J.B. Glubb, "Air and Ground Forces in Punitive Expeditions," *Journal of the Royal United Service Institution* LXXI (1926), 782.

^{vii} MacGregor Knox and Williamson Murray, *The dynamics of military revolution, 1300-2050* (Cambridge, UK ; New York: Cambridge University Press, 2001).

^{viii} Jeremy Black, *Western warfare, 1775-1882* (Bloomington: Indiana University Press, 2001), 60, 71; Max Boot, *The Savage Wars of Peace: Small Wars and the Rise of American Power* (New York: Basic Books, 2003), 27-29; "Anglo-Dutch Bombardment of Algiers, 1816" Armed Conflict Timeline at <http://www.onwar.com/aced/data/alpha/algiers1816.htm> (accessed 28 February 2009)

^{ix} The incident is known as the "Don Pacifico" after the British citizen involved. See Derek Taylor, *Don Pacifico: The Acceptable Face of Gunboat Diplomacy* (London; Portland Or.: Vallentine Mitchell, 2008).

^x Arthur Herman, *To Rule the Waves: How the British Navy Shaped the Modern World* (New York, NY: HarperCollins, 2004), 461.

^{xi} Robert Shufeldt letter to Leopold Morse on the topic "The Relation of the Navy to the Commerce of the United States," 1878, cited from Kenneth J. Hagan, *American gunboat diplomacy and the old Navy, 1877-1889* (Westport, Conn.: Greenwood Press, 1973), 37.

^{xii} Serge Ricard, "The Roosevelt Corollary," *Presidential Studies Quarterly* 36, no. 1 (2006): 17-26. For details of the Venezuelan crisis, see Holger H. Herwig, *Politics of Frustration: The United States in German Naval Planning, 1889-1941* (Boston: Little, Brown, 1976) and Nancy Mitchell, "The height of the German challenge: The Venezuela blockade," *Diplomatic History* 20, no. 2 (1996): 185.

^{xiii} James Cable, *Gunboat Diplomacy 1919-1979: Political Applications of Limited Naval Force*, 2d ed. (New York, NY: St. Martin's Press, 1981).

^{xiv} J.A. Chamier, "The Use of the Air Force for Replacing Military Garrisons," *Journal of the Royal United Service Institution* LXVI (1921), 210.

^{xv} John Salmond, "Air and Ground Forces in Punitive Expeditions," *Journal of the Royal United Service Institution* LXX (1925), 496. He noted that one should add an additional 1 killed and 14 wounded if one considered the combined Kurdistan operations rather than purely air operations. The exact number of enemy casualties was "infinitesimal."

^{xvi} David E. Omissi, *Air power and colonial control: The Royal Air Force, 1919-1939* (New York, NY: Manchester University Press), 37.

^{xvii} James Corum, "The Myth of Air Control. Reassessing the History," *Aerospace Power Journal* 14, no. 4 (Winter 2000), 71.

^{xviii} Glubb, "Air and Ground Forces in Punitive Expeditions," 777, 780.

^{xix} Ibid.

^{xx} Corum, "The Myth of Air Control. Reassessing the History."

^{xxi} James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*, Modern war studies (Lawrence, Kan.: University Press of Kansas, 2003), Omissi, *Air power and colonial control: The Royal Air Force, 1919-1939*.

^{xxii} Julian Stafford Corbett, *Some principles of maritime strategy* (London, New York,: Longmans, Green and Co., 1911), 40.

^{xxiii} Carl H. Builder, "Doctrinal Frontiers," *Airpower Journal* 9, no. 4 (Winter) (1995).

^{xxiv} Dag Henriksen, "Inflexible Response: Diplomacy, Airpower and the Kosovo Crisis, 1998-1999," *Journal of Strategic Studies* 31, no. 6 (2008), 831.

^{xxv} James P. Pinkerton, "Exo-Strategy," *The American Conservative*, June 2 2008.