

## In the Interest of Deterrence



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**Abstract:**

Integrated Deterrence is not new and not a military only conception. This paper will examine select historical events to provide a foundational understanding of integrated deterrence and analyze what can be learned from these events as the United States prepares for a new model of integrated deterrence, which includes artificial intelligence. Current policymakers and pundits focus on the military and nuclear deterrent. While relevant, it takes more than just military deterrence to make it integrated. It will then apply this history to issues concerning artificial intelligence, and robots in the face of these technologies being applied to integrated deterrence.

**Introduction**

Since the 2022 National Defense Strategy was released a lot of discussion has rightly centered around integrated deterrence. Two of the four top-level defense priorities listed in the NDS are focused on ‘deterring strategic attacks against the United States, its allies, and partners’ and ‘Deterring aggression while being prepared to prevail in conflict...’. What is interesting about recent US defense policy is that it has not really changed much since the middle of the Cold War. Indeed, to understand the idea of integrated deterrence, it might be helpful to think about President John F. Kennedy’s 1962 speech to the Cadets at West Point where he told them that upon graduation they would ‘have a responsibility to deter war as well as to fight it.’ He went on to point out that US forces ‘complement our diplomacy, as an arm of our diplomacy, as a deterrent to our adversaries, and as a symbol to our allies of our determination to support them.’<sup>1</sup> While many salient points were made during this speech, it is informative that he tied deterrence

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<sup>1</sup> John F. Kennedy, United States Military Academy Commencement Address, delivered 6 June 1962, West Point, New York, <https://www.americanrhetoric.com/speeches/jfkwestpointcommencementspeech.htm>, Accessed 7 July 2023.

to diplomacy, something storied diplomat, historian, and Cold War strategist George F. Kennan also did.<sup>2</sup>

Perhaps a definition of deterrence is in order. The Department of Defense defines deterrence as ‘the prevention of action by the existence of a credible threat of unacceptable counteraction and/or belief that the cost of an action outweighs the perceived benefits.’ In other words, deterrence is the ability to discourage an adversary from a course of action based on fear of the consequences. Al Mauroni, of the US Air Force Center for Strategic Deterrence Studies simplifies things for us, stating that deterrence is the threat of force.<sup>3</sup> But does deterrence have to only be a threat of an armed response? Looking back to Truman, Kennedy, and Kennan, perhaps not. US Army War College historian and Professor of Strategy Antulio J. Echevarria notes, ‘for best effect...deterrence should have diplomatic, informational, military/operational, and economic dimensions; and these clearly must be integrated and synchronized.’<sup>4</sup> Put simply, integrated deterrence is a whole of government approach. Everyone has to do their part.

There is often inconsistent interpretation and application of deterrence in theory and as strategy leading to a common approach that is to narrowly conceptualize deterrence in terms of military might, neglecting that the power of a nation as the sum of all its capabilities including military, economic wealth, and information influence (propaganda).<sup>5</sup> Effective deterrence strategy accounts for and pragmatically utilizes all of the power capabilities available to a nation.

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<sup>2</sup> Kennan, G., ‘Measures Short of War,’ *The Foreign Service Journal*, (September 2019) [www.afsa.org/measures-short-war](http://www.afsa.org/measures-short-war), accessed 7 July 2023.

<sup>3</sup> ‘Deterrence: I Don’t Think It Means What You Think It Means,’ Modern War Institute at West Point, <https://mwi.usma.edu/deterrence-dont-think-means-think-means/>, accessed 7 July 2023.

<sup>4</sup> Antulio J. Echevarria II, *Operating in the Gray Zone: An Alternative Paradigm for US Military Strategy* (Carlisle: US Army War College Press, 2016), xiv.

<sup>5</sup> Freedman, L. *Deterrence*. Polity: Cambridge, UK, 2008; In reference to political actors (international organizations, nation-states, states, and non-state actors) and for purposes of this analysis, ‘power’ may be understood as the capacity to get another to do what they otherwise would not do. See Baldwin, David A., *Power and International Relations: A conceptual approach*, Princeton University Press, 2016; Barnett, Michael, and Raymond Duvall. ‘Power in international politics’ *International Organization* 59, no. 1 (2005): 39-75. Beckley, M.

International security and nuclear deterrence expert Patrick Morgan notes, ‘Deterrence strategy refers to the specific...posture, threats, and ways of communicating them...while the theory concerns the underlying principles on which any strategy is to rest.’<sup>6</sup> William Kaufman, who, in his seminal 1954 paper ‘The Requirements of Deterrence’, explained that the essential logic of deterrence theory is the use of threats directed at another to induce a change in behavior to one’s benefit.<sup>7</sup> Importantly, Kaufman did not specify that threats are only be threats of military force. Given the infinite possible sets of circumstances to which nations must respond over time, deterrence strategies must be designed specifically for a given set of circumstances to which a nation responds.<sup>8</sup> Fortunately, reflecting on the use of deterrence in history provides a roadmap, of sorts, to effective deterrence strategies – strategies that tend to follow Echevarria’s position more than Mauroni’s.

Still, divorcing deterrence theory from nuclear deterrence is challenging. Historian Sir Lawrence Freedman notes that without the development of nuclear weapons deterrence theory would likely have remained an ‘occasional stratagem’ rather than developing into a robust theory and set of strategies during the Cold War.<sup>9</sup> To this point, historian Francis Gavin questions if

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‘The power of nations: Measuring what matters.’ *International Security* 43, no. 2 (2018): 7-44; Nye, J. S. *Soft power: The means to success in world politics*. Public affairs, 2004; Carr, E.H. *The Twenty Years’ Crisis, 1919-1939: Reissued with a new preface from Michael Cox*. Springer, 2016.

<sup>6</sup> Morgan, P. *Deterrence Now*. (Cambridge: Cambridge University Press, 2003), 8.

<sup>7</sup> William W. Kaufmann, ‘The Requirements of Deterrence,’ *Center of International Studies*, (Princeton: Princeton University Press, 1954).

<sup>8</sup> Lacking a third-party adjudicator in international politics, state actors must settle disputes and enforce contracts by utilizing available capabilities and resources. Deterrence strategies offer approaches to effectuate such outcomes consistent with such a self-help strategy and may include efforts at cooperation or competition. See Robert Axelrod, *The Evolution of Cooperation*, (Basic Books, 1984); Charles L. Glaser, ‘Realists as optimists: Cooperation as self-help.’ *Security Studies* 5, no. 3 (1996): 122-163; Robert Jervis, ‘Cooperation under the security dilemma’ *World politics* 30, no. 2 (1978): 167-214; Duncan Snidal, ‘International cooperation among relative gains maximizers’ *International Studies Quarterly* 35, no. 4 (1991): 387-402; Katja Weber, ‘Hierarchy amidst anarchy: A transaction costs approach to international security cooperation’ *International Studies Quarterly* 41, no. 2 (1997): 321-340.

<sup>9</sup> Lawrence Freedman, ‘Does Deterrence Have a Future?’, *Arms Control Today*, (October 2000).  
<https://www.armscontrol.org/act/2000-10/features/does-deterrence-future>. Accessed March 20 2023.

there ever would have been a Berlin Crisis without nuclear weapons. Gavin points out that US and British forces would not have been able to stop Soviet troops marching into the city on their own so what would have stopped them besides the threat of nuclear war? In Gavin's view, nuclear deterrence turned a non-strategic city into a high-value city simply because the US could defend it from afar. A viewpoint Eisenhower himself complained about numerous times. Without nukes there was no deterrence of the Red Army where Berlin was concerned.<sup>10</sup>

This all too brief review of deterrence scholarship and policy implementation yields four insights. First, deterrence theory is a bedrock for coercive diplomacy with clear, coherent, and seductive logic on which strategies may be developed and implemented to effectuate desired policy changes on the part of an adversary. Second, integrated deterrence is not a recent iteration of deterrence strategy. Third, integrated deterrence is in some ways an acknowledgement that deterrence as a theory is perfectly suitable to any number of instances in which coercive diplomacy is deemed optimal for achieving foreign policy objectives. Fourth, repeated deterrence strategies may occur in response to technological change, such as nuclear weapons, cyber weapons, artificial intelligence, and militarized (semi)autonomous robots.

The idea here is that deterrence is neither new nor consistently applied. By scrutinizing integrated deterrence and how it was utilized during the post-Second World War era we can create space for novel deterrence strategies to address varying political and national security conditions in the present.

### ***A Historical Perspective***

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<sup>10</sup> Francis Gavin, *Nuclear Statecraft: A History and Strategy in American's Atomic Age* (Ithaca: Cornell University Press, 2012), 58-74, 151.

In 2011, the National Security Space Strategy followed the idea of deterrence by denial. While the thought in 2011 was to deny US adversaries ‘meaningful operational benefits’, the same idea was coursing through Washington in 1945.<sup>11</sup> Within months of Harry S. Truman ascending to the Presidency in April 1945, deterrence of Soviet aggression was at the forefront of US economic and defense policy. Importantly, US deterrence policy was, at the time, more for its allies than the US itself. With a monopoly on atomic weapons and two oceans separating it from the Red Army, America was using deterrence as a means of projecting its power – as a means of deterring a Soviet attack on western Europe. But despite the atomic monopoly, Truman’s first policy of deterrence did not rely on US military might, instead, it rested on US monetary might.

In March 1947 President Truman asked congress for \$400 million in military and economic assistance for Turkey and Greece, and to support ‘free peoples who are resisting attempted subjugation by armed minorities or by outside pressures.’<sup>12</sup> The US was not sending troops or weapons to these countries, it was sending money. In this case the money was meant for the purchase of weapons. It was also meant to fill the gap left by the withdrawing British, who were in no shape to continue supporting the Greeks and Turks at that time.

In 1948, the Truman administration set out on its second instance of economic deterrence in the form of the Marshall Plan. Once again, the United States was offering money to deter Soviet advances. In this case, the fear was not that the Soviet armies would take western Germany, France, and other countries by force. The fear was that the Soviet Union would use the deprivation caused by the destruction of the Second World War to convince Europeans to invite the communists into their governments. The point of the Marshall Plan was not simple altruism,

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<sup>11</sup> National Security Space Strategy, January 2011 [file:///Users/justinlmstead/Dropbox/My%20Mac%20\(Justins-MacBook-Air.local\)/Downloads/2011\\_nationalsecurityspacestrategy.pdf](file:///Users/justinlmstead/Dropbox/My%20Mac%20(Justins-MacBook-Air.local)/Downloads/2011_nationalsecurityspacestrategy.pdf), 13, accessed 7 July 2023.

<sup>12</sup> Nicolaus Mills, *Winning the Peace: The Marshall Plan & America’s coming of Age as a Superpower* (New Jersey: John Wiley & Sons, Inc., 2008), 95.

but an economic incentive for Europeans to remain committed to a democratic form of government and capitalism on the American model.

In the cases of Greece and Turkey and western Europe, the United States sought to deny ‘meaningful operational benefits’ to the Soviets. At this time the US and USSR (and western Europe) were still allies. Yes, friction was there, but the hope on the American side was that common ground could be found. The importance of this is that Truman had yet to threaten the use of the US Atomic arsenal (shockingly small at the time) in response to Soviet aggressions. Key to this point was that the Soviets were not planning, and the western allies were not expecting, a military attack. It was a political and economic issue that was deterred by economic abilities.

As tensions over Berlin and the unification of the western zones of occupation in Germany took effect, the threat of the Red Army seizing Berlin grew and the US made it clear that it would defend the German capital. Here is where the atomic deterrence took hold. If the Soviet Union attacked western Europe, the US promised to respond with overwhelming force that included atomic weapons. The assured destruction of the Soviet military was deterrence enough to keep Soviet tanks in their zone.

Once the Soviets had broken the American atomic monopoly in 1949, deterrence took on a new meaning. That same year, the US and its western European allies formed the North Atlantic Treaty Organization (NATO – celebrating its 75<sup>th</sup> Anniversary on 4 April of this year). While ostensibly a defensive alliance, NATO was also clearly all about deterrence. Article 5 of the North Atlantic Treaty, stating that an attack on one member nation would be considered an attack on all members is designed to deter a Soviet attack on any member state with the armed forces of all NATO nations committing to respond to the attack. In this case the expected first



nation to be attacked was West Germany. True, both the US and France placed all sorts of caveats to their response, with France withdrawing from the alliance in 1966, but the threat of the US using nuclear and conventional weapons against a Soviet attack on an allied nation was there for all to see.

Since the founding of NATO, there have been questions about whether or not the US was really willing to exchange New York for Berlin, or any other European city in a nuclear exchange. It is a fair question, but to date no one country has been willing to find out. Why? Because the possibility that the US is indeed willing to exchange its cities and people to defend its allies has been made clear. That is deterrence.

Because deterrence is about preventing your adversary from committing an act of aggression it is, perhaps, also instructive to look at deterrence from a different angle. In February 1945, the Soviet Army had conquered and occupied the whole of eastern Europe up to the gates of Berlin. This meant that all Polish territory was under Red Army control as well as large swaths of Slovakia, Yugoslavia, Romania, Bulgaria, and Hungary. When the Big Three leaders Churchill, Roosevelt, and Stalin, met at Yalta in mid-February 1945, one of the discussion points was Poland. Two items that were discussed were the free and fair elections in Poland, which included the London based Polish government-in-exile, and Poland's postwar borders. Stalin agreed to allow free elections but was adamant that Poland's borders be changed to provide the Soviet Union a greater buffer with the west. Skipping ahead a few months to the Potsdam meeting between the Big Three, which, after Roosevelt's death, now included Harry Truman as president of the United States and we find that Stalin's tune has changed.

A very basic description of the purpose of this meeting is that it was supposed to solve the issues facing postwar Europe. For this argument though, the focus is on Stalin's decision to

not allow the Polish government-in-exile to participate in Poland's elections. Churchill and Truman, if one were to listen to the arguments of present-day defeatists, 'gave away eastern Europe.' But the reality is that there was one failed attempt at deterrence and one successful use of deterrence that took place. (Historical side note: Stalin did in fact invited the Polish government-in-exile to participate and then had them arrested and executed prior to elections).

When President Truman realized that the Soviets were not living up to what he and Churchill believed had been decided at Yalta, he called Soviet Foreign Minister Vyacheslav Molotov in for a meeting and famously talked directly and bluntly about the need for Stalin to keep his word regarding Poland. The meeting ended with Molotov testily stating that he had 'never been talked to like that in my life,' to which Truman replied, 'Carry out your agreements and you won't get talked to like that.' This exchange is often seen as a new president showing his grit, and while true, it is also an example of diplomacy in action as deterrent. The implicit threat was that if the Soviet Union did not keep its word, then the US would be much harder to deal with on other issues regarding Europe. History tells us that Truman's attempt to deter Stalin from taking actions in Poland was a failure, which is a cautionary tale about how successful deterrence can be relying on a single capability. In this case, the single capability was diplomacy at national leader level, in the absence of a clearly communicated price to be paid by the Soviets for failing to abide by the Yalta agreements.

From the Soviet angle, their tacit deterrence was a rousing success. Stalin's deterrent against US and British actions regarding the Polish border and elections was very simple – it was deterrence by denial. The Red Army occupied all of Poland and outnumbered the combined strength of the western allied armies leaving Churchill and Truman with two choices: Mobilize their war-weary nations to attack their Russian ally to ensure free elections in Poland or accept

the reality on the ground. In what was the best move for the time and situation, the Anglo-American leaders agreed to let Stalin have his way in Poland and eastern Europe. In one real sense this lesson was learned by current Russian leaders. When Russia annexed Crimea and helped the eastern Ukrainian provinces break away in 2014, the challenge was whether the US and others would respond, and if they did, what would that response look like? Sanctions were levied, but no military force was sent to support Ukraine. Russian deterrence was troops on the ground, not words spoken in the Oval Office – a lesson the Biden administration may not have heeded as Russia massed forces for invasion of Ukraine in early 2022.

As Russia prepared for its second invasion of Ukraine, President Biden made it clear that the US would impose crippling sanctions on Russia if it did, but he was not willing to send US troops to the country. There were a number of reasons the US would not have used military power to stop the invasion, but this is once again an example of the US attempting to utilize its economic power to deter an adversary from taking military action. Some will argue that sanctions don't work, or they take too long, but in the grand scheme of nations, Russia's economy may not recover for decades. Simply because the threat of sanctions did not deter Putin from attacking his neighbor does not mean sanctions were not a credible deterrent or that deterrence does not work in all instances. In this particular case, Putin understood the US use of sanctions as a method of deterrence and had devoted considerable resources to building a sovereign national wealth fund as a buffer against potential sanctions. Reports indicate Putin's wealth fund equated to an estimated 10.2 percent of Russian GDP as of 2022.<sup>13</sup> Time will tell if the invasion was worth it for Putin as an individual and Russia as a nation, with current estimates

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<sup>13</sup> Reuters, March 2, 2022. 'Factbox: Is Russia's National Wealth Fund deep enough to counteract sanctions?' *Reuters News*. Url: <https://www.reuters.com/business/finance/is-russias-national-wealth-fund-deep-enough-counteract-sanctions-2022-03-02/>. Last accessed, September 4, 2023.

by the International Monetary Fund indicating Russia has sufficient remaining resources in its sovereign wealth fund to pay for military operations in Ukraine well into this year (2024).<sup>14</sup>

However, if one were to believe the Annual Accounting Report for Gazprom, Russia's majority state-owned gas giant, its sales have plummeted by 41.6 percent year-over-year in 2023 while its expenses have largely remained the same. In 2022 it made a \$16.99 billion profit on \$63.05 billion in gas revenue and in 2023 it took a \$3.16 billion loss on \$36.79 billion in gas revenue.<sup>15</sup>

For a country that is running a deficit and spending forty percent of its budget on its war in Ukraine, while allowing education, health care, infrastructure, social payments, highways, railroads, and other basic infrastructure languish, losses like Gazprom's could lead to more serious issues in basic governance. A potential goal and consequence of sanctions.

As the Soviet administration of Poland post-World War Two and the war in Ukraine demonstrate, deterrence in practice displays mixed results. On one hand, and in light of the 2022 invasion of Ukraine by Russian military forces, the Budapest Memorandum (the treaty by which Ukraine gave up the nuclear weapons it controlled when the Soviet Union collapsed) may have been inadequate as a deterrent to Russia, though obligating Russia, the US, and UK to honor Ukraine's sovereignty.<sup>16</sup> One could plausibly claim the United States and Great Britain, the other signatories to the memorandum, failed to adequately signal sufficient costs to Russia that would have dissuaded Russian aggression toward Ukraine. On the other hand, the US and its European allies have not intervened militarily, though they have given ample military support to Ukraine in

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<sup>14</sup> Adam Taylor, April 26, 2023. 'Russia can fund war in Ukraine for another year despite sanctions, leaked document says.' *Washington Post*. Url: <https://www.washingtonpost.com/world/2023/04/26/russia-sanctions-impact-leaked-documents/>. Last accessed, September 4, 2023.

<sup>15</sup> 'Gazprom's 2023 group core earning set to drop almost 40%', Reuters, 19 December 2023. <https://www.reuters.com/business/energy/gazproms-2023-group-core-earnings-set-drop-almost-40-2023-12-19/> accessed 28 March 2024.

<sup>16</sup> <https://treaties.un.org/doc/Publication/UNTS/Volume%203007/Part/volume-3007-I-52241.pdf>.

the form of weapons and money. As already noted, prior to Putin's invasion, President Biden clearly stated US troops would not be placed on Ukrainian soil in order to avoid a Third World War. In one real sense this is an admission that Russia's nuclear arsenal is a deterrent to US active involvement in the war. By the same token, Russia has not directly attacked the supply lines coming from each of Ukraine's western neighbors because it believes this would be an act that would cause NATO nations to invoke Article 5, and start a wider, more devastating war. Here again, deterrence is at work, this time in keeping a war localized - for now.

This leads us to another, often less thought about act of deterrence in the post-Cold War era and that is the mere act of having nuclear weapons. As noted above, President Biden ruled out US ground troops being placed in Ukraine in order to avoid a war between the US and Russia. And while a conventional war would be devastating, the fear of that escalating to a nuclear exchange is also a consideration. Indeed, why have the US and North Korea not gone to war? There are a variety of reasons, but the largest one to date is that the North Koreans are now a nuclear power. It is not a stretch of the imagination to think that Kim Jong Un would use nuclear weapons to avoid defeat. This is the same reason countries such as Pakistan, India, China, and potentially others all have nuclear weapons.<sup>17</sup> It is exactly the reason Iran wants them. It is an easy argument to make that had Ukraine not given up the nuclear weapons it inherited from the Soviet Union upon its collapse, that Putin would have not invaded in the first place. Again, the threat alone of nuclear retaliation is a deterrent. There is a school of thought that believes the reason there has not been a major war since the Second World War is down to nuclear deterrence. Clearly there have been wars, but none between the major world powers and none between nuclear states.

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<sup>17</sup> T.V. Paul, *Restraining Great Powers: Soft Balancing from Empires to the Global Era* (New Haven: Yale University Press, 2018)

There is also a case to be made that nukes themselves act as a deterrent against their use – what Nina Tannenwald calls the nuclear taboo.<sup>18</sup> If Putin were to sanction the use of nuclear weapons in Ukraine, tactical or strategic, the world would react in horror. Would he, or any leader, be willing to become an international pariah? Would China continue to support Russia if it became the first nation to use nuclear weapons in war since 1945? While it is impossible to tell for sure, the best bet would be no. The international outcry would be so intense that it is more likely that China would distance itself from Putin, India would stop purchasing Russia's oil, and Russia would find itself even more isolated with more sanctions being placed on it. An interesting aside to this is a 2023 article in *RT* by Sergey Karaganov, a Putin apologist. In his article, he states, 'By using its nuclear weapons, Russia could save humanity from a global catastrophe,' Karaganov tries to make the case for a Russian first strike to remind the west of the incredible power of nuclear weapons.<sup>19</sup> By simply making this case, Karaganov, and therefore Putin, are attempting to deter the US and western Europe from continuing their support of Ukraine.

During the Cold War the idea of mutually assured destruction rose to the forefront of deterrence theory. The idea being that if nations with nuclear weapons could destroy each other regardless of who struck first, they would not allow events to escalate to the point of using nukes. As mentioned earlier, the one caveat to this was Berlin. Successive US presidents were determined to defend the German city and everything it stood for even if it meant using nuclear weapons. Eisenhower, Kennedy, and Khrushchev all bemoaned the fact that a city of no strategic

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<sup>18</sup> Nina Tannenwald, 'The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use,' in *International Organization*, vol. 53, No. 3, Summer, 1999, 433-478.

<sup>19</sup> Sergey Karaganov, 'By using its nuclear weapons, Russia could save humanity from a global catastrophe,' *RT*, 14 June 2023, [https://www.globalsecurity.org/wmd/library/news/russia/2023/06/russia-230614-rt01.htm?\\_m=3n.002a.3647.bh0ao44qmm.3dxy#](https://www.globalsecurity.org/wmd/library/news/russia/2023/06/russia-230614-rt01.htm?_m=3n.002a.3647.bh0ao44qmm.3dxy#), accessed 14 June 2023.

importance was holding them hostage, yet they continued to argue over the city for thirteen years. Frank Gavin's point was made earlier, and it bears repeating – as insane as it might seem, or did seem at the time, the threat of nuclear weapons both exacerbated the Berlin situation and kept it from getting out of hand. Had there been no nuclear weapons, the US and its western allies would not have been able to stop the Soviets from taking the city, and perhaps more of West Germany.<sup>20</sup>

Coming back around to economic deterrence, it is important to think about deterrence as a long-pull strategy.<sup>21</sup> While some claim that the US uses sanctions too much, it has historically been a politically easy weapon to use, costing little in blood and treasure, while delivering the perception that political leaders are doing something. Perhaps a successful example is the Reagan administration's Strategic Defense Initiative. Like Reagan or not, his increase in defense spending contributed to hastening the economic collapse of the Soviet Union. The point here is that the decision to increase and modernize conventional forces and the number of ballistic missiles forced the Soviets to do the same in order to maintain parity and therefore maintain their deterrent of a second strike. When Reagan announced the US was going to create a space defense system to protect it and its allies from nuclear missile strikes, the famous Strategic Defense Initiative (SDI) or Star Wars, put so much pressure on Soviet finances that the Politburo quickly moved to negotiate a reduction in strategic nuclear weapons while also increasing defense spending to unsustainable levels. Relying on data from The World Bank and author's calculations (remember, I am a historian so my ability to 'figure' is naturally limited), US defense spending as a percentage of GDP between 1981 and 1989 averaged about 6.27 percent of

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<sup>20</sup> Francis J. Gavin, *Nuclear Statecraft: History and Strategy in America's Atomic Age* (Ithaca: Cornell University Press, 2012), 70-71.

<sup>21</sup> Austin Long, *From Cold War to Long War: Lessons from Six Decades of Rand Deterrence Research*, (Santa Monica: RAND Corporation, 2008), 19-20.

US GDP. Whereas the Soviet Union spent an estimated 15 percent to 17 percent of GDP, well over double what the US spent on defense during roughly the same period. In the end, SDI itself never came to fruition; President Clinton defunded it in 1994 after the Cold War had ended with the economic collapse of the Soviet Union. But the pressure to keep up with US defense spending and the technological innovation that came with it pushed the Soviet Union's economy beyond the breaking point.

Importantly, economic deterrence in this context appears to have proved effective in part due to the specific structure of deterrence relationships then in existence between the United States and Soviet Union. This deterrence structure included ongoing strategic competition through expensive arms races. In other words, the Reagan administration conjured a policy of economic deterrence strategy in the form of SDI that was optimal for the specific circumstances to which SDI was applied, to the extent that its targeted adversary bankrupted itself trying to keep up. This example is consistent with what is intimated by integrated deterrence strategy. Utilizing available power capabilities, assessing power capability efficacy given prevailing conditions, selecting appropriate power capabilities, and developing then implementing policies to effectuate deterrence.

Along these lines, the US CHIPS and Science Act of 2022, could plausibly be characterized as an integrated deterrence initiative utilizing economic levers directed at China. Recognizing that microprocessors are strategic commodities and the peril of an increasingly aggressive China, US policymakers passed the CHIPS Act to invest in US-based microchip manufacturing capacity.<sup>22</sup> The purpose of this policy approach is to ensure consistent supply of

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<sup>22</sup> Christopher Darby, and Sarah Sewall. 'The innovation wars: America's eroding technological advantage,' *Foreign Affairs* 100 (2021): 142; Chris Miller, *Chip war: the fight for the world's most critical technology*, Simon and Schuster, 2022; Ngoc, Nguyen Minh, Dinh Thanh Viet, Nguyen Hoang Tien, Phuoc Minh Hiep, Nguyen Tuan Anh, Le Dinh Hue Anh, and V. T. P. Dung. 'Russia-Ukraine war and risks to global supply chains.' *International*



microchips to the US economy and defense industrial base, prevent advanced technology transfer to China, and maintain what remains of the US technological advantage.

In some corridors of power, it is believed that China is watching the world's reaction to the invasion of Ukraine in an attempt to determine how it would fair if it decided to invade Taiwan. It is already thought that China is working to insulate itself to Western sanctions because of the impact they are having on Russia and what they think the impact will be in the decades to come. One example of this is the recent acquisition of ten percent of China's Rongsheng Petrochemical by Saudi Arabia's Aramco. Interestingly, China has also been stockpiling wheat and other foodstuffs recently as if in anticipation of being cut off from its imports. China has especially been keen to acquire advanced microprocessor technology but has been thwarted by US led Western economic deterrence efforts, that includes the aforementioned US CHIPS and Science Act. Invading Taiwan presents China with a conundrum, capturing Taiwan by force will destroy the economic resources (microchip foundries) China covets in part to achieve technological autarchy. China is as dependent on cheap microchips from Taiwan as all other nation, and this economic dependency creates leverage for adversaries of China. By preventing China from acquiring advanced microprocessors, Western states are able to slow the pace if not outright prevent China from achieving technological self-sufficiency, military parity or worse, dominance, and sustain Western economic growth. The use of economic deterrence by Western, and especially US policymakers, directed at China, lends support to a broader more holistic concept of deterrence.

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*Journal of Mechanical Engineering* 7, no. 6 (2022): 633-640; Force, Task. 'High performance microchip supply.' Annual Report. Defense Technical Information Center (DTIC), USA (2005); Zeng, Yuleng. 'Microchips and sneakers: Bilateral trade, shifting power, and interstate conflict.' *Journal of Peace Research* (2023).

There have been instances where deterrence, when applied consistently, assisted the United States in achieving its foreign policy objectives. The reverse also holds. Will integrated deterrence prove lasting as a policy guide? Furthermore, integrated deterrence may or may not yield desired utility in the face of the latest revolution in military affairs driven by advances in AI and robotics technologies.

### ***A More Robust Integrated Deterrence Strategy***

Once the Soviet Union successfully tested a nuclear device in 1949, the prospect of nuclear war at unimaginable destructive scale shifted US strategic thinking. As a guide for foreign policy, nuclear deterrence strategy proved its worth, assisting US policymakers with maintaining crisis stability during the Cold War. As artificial intelligence and robotics technologies rapidly develop and increasingly replace and magnify human labor and cognition, militaries are developing AI and robotics applications to achieve force multiplication advances. It's not for nothing that Putin candidly noted, 'Artificial intelligence is the future, not only for Russia, but for all humankind. It comes with colossal opportunities, but also threats that are difficult to predict. Whoever becomes the leader in this sphere will become the ruler of the world.'<sup>23</sup>

Since the end of the Cold War, the undisputed ruler of the world has been a collective hegemony of advanced liberal democracies.<sup>24</sup> The United States remains in the enviable position of first among equals within the collective hegemony that presently and largely set the rules of

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<sup>23</sup> R. Gigova, 'Who Vladimir Putin Thinks Will Rule the World,' 2017, <https://www.cnn.com/2017/09/01/world/putin-artificial-intelligence-will-rule-world/index.html>. Last accessed August 5, 2023.

<sup>24</sup> John G. Ikenberry, 'Liberal Leviathan,' *Liberal Leviathan*, Princeton University Press, 2011; Daniel Deudney, and John G. Ikenberry. 'Liberal World: The Resilient Order.' *Foreign Affairs* 97 (2018): 16; Jennifer Lind, and William C. Wohlforth. 'The Future of the Liberal Order is Conservative.' *Foreign Affairs* 98, no. 2 (2019): 70-81; Christopher Layne, *The Peace of Illusions: American Grand Strategy from 1940 to the Present*, (Ithaca: Cornell University Press, 2006),

global politics. This collective includes the US, United Kingdom, France, Germany, Japan, Canada, and Italy. As ‘status quo’ powers, this collective is incentivized to develop defensive and deterrent capabilities to sustain the International Liberal Order (ILO). Revisionist states such as China, Russia, Iran, and depending on prevailing conditions, India, may be incentivized to revise or overthrow the ILO to gain advantage. Through this lens, the notion that current Russian aggression against Ukraine is consistent with its efforts to revise at best, and ideally overthrow the prevailing ILO, which from Russia’s perspective constrains and oppresses Russia, is plausible. Similarly, China and Iran harbor ambitions to be free from the perceived shackles of western liberal institutionalism. Artificial intelligence and robotics technologies may prove determinative in the age-old contest between status quo and revisionist states.

Maintaining or revising the status quo boils down to the power capabilities available to individual nations. Power may simply be understood as the capacity to get another to do what they otherwise would not do – an amazingly similar definition to that of deterrence.<sup>25</sup> Importantly, nations are restricted only by their determination of which optimal power capability or mix of available power capabilities may best assist accomplishing the maintenance or revision of the status quo. Deterrence theory is suitable as a guide for developing strategies to utilize available power capabilities in pursuit of status quo maintenance or revision.

The advent of nuclear weapons competition led to a narrow focus on the application of deterrence theory to managing the risk of nuclear confrontation, escalation, and war.

Development of artificial intelligence and robotics technologies has similarly led many to

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<sup>25</sup> See D.A. Baldwin, *Power and International Relations: A Conceptual Approach*, Princeton University Press, 2016; Michael Barnett, and Raymond Duvall. ‘Power in international politics.’ *International organization* 59, no. 1 (2005): 39-75; Beckley, M. ‘The power of nations: Measuring what matters.’ *International Security* 43, no. 2 (2018): 7-44; Morgenthau, Hans Joachim, Kenneth W. Thompson, and W. David Clinton. ‘Politics among nations: The struggle for power and peace.’ (1985); Nye, J. S. *Soft power: The means to success in world politics*. Public affairs, 2004.

reconsider deterrence theory as a suitable guide for developing strategies to efficiently and productively employ available power capabilities to achieve strategic objectives. Development and introduction of ‘integrated deterrence’, represents a shift in US strategic thinking from a narrow focus on nuclear deterrence strategy back to a broader deterrence strategy – one that accounts for both nuclear weapons, conventional weapons, and artificial intelligence. Why the more broad conceptualization of deterrence strategy represented by ‘integrated deterrence’? Quite simply, AI and robotics technologies are general purpose technologies – nuclear technology is not. As general-purpose technologies, a broader understanding of technological change, impact and response is required by governments.<sup>26</sup>

General purpose technologies are ‘characterized by the potential for pervasive use in a wide range of sectors and by technological dynamism.’<sup>27</sup> Electricity or the wheel are perhaps the best examples of how general-purpose technologies achieve pervasive use. Artificial intelligence and robotics technologies are likewise achieving pervasive use through replacement of human cognition, creativity, and labor.<sup>28</sup> Integrated deterrence has the virtue of shifting strategic thinking to a broader appreciation and focus on the degree of disruption the advent of AI and robotics technologies present to current liberal civilization. Yet, it lacks analytical depth sufficient for assessing immediate, medium-term, and long-term security threats arising from artificial intelligence and (semi)autonomous robotics technologies. Further development of integrated deterrence is greatly needed to develop analytical depth capable of assisting

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<sup>26</sup> Ryan David Kiggins, ‘Robots and politics’, in *Elgar Encyclopedia of Technology and Politics*, pp. 320-324. Edward Elgar Publishing.

<sup>27</sup> Timothy F. Bresnahan, and Manuel Trajtenberg. ‘General purpose technologies “Engines of growth”?’ *Journal of econometrics* 65, no. 1 (1995): 83-108.

<sup>28</sup> Gans Agrawal, & Goldfarb 2018; Brynjolfsson & McAfee 2014; Kiggins 2018, 2021, 2023; Mayer-Schönberger & Ramge 2018; Thiele 2018; Zuboff 2019.

policymakers with identifying, assessing, and responding to the rapidly expanding variety of national security threats.

### ***Emerging Security Threats***

Overall integrated deterrence represents a return to the deterrence strategy playbook of the Cold War for the United States. An important takeaway to consider is that US deterrence has traditionally tended to deliver on its promise when US policymakers became less narrowly focused on strategic nuclear competition, and more broadly focused on available power capabilities in the military, economic, and information spaces. Integrated deterrence has traditionally yielded a more holistic deterrence approach for the United States. An important caveat is that understanding the history and historical use of deterrence during the post-Second World War era, may yield fruitful insight and effective development and implementation of deterrence strategies. A challenge going forward, however, is to further refine integrated deterrence strategy to account for the fact that AI and robots are always posing opportunities and threats.

For AI to deliver on its promise it must constantly consume vast amounts of (human generated) data to develop optimal predictions. Fundamentally, AI is a predictive tool that presently augments, shapes, and replaces human decision making in nearly all spheres of human activity.<sup>29</sup> AI is always consuming and predicting, with robotics technologies delivering on its

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<sup>29</sup> Agrawal, Ajay, Joshua Gans, and Avi Goldfarb. *Prediction machines: the simple economics of artificial intelligence*, Harvard Business Press, 2018; Lee, Kai-Fu. *AI superpowers: China, Silicon Valley, and the new world order*, Houghton Mifflin, 2018; Savage, Neil. 'The race to the top among the world's leaders in artificial intelligence.' *Nature* 588, no. 7837 (2020): S102-S102; West, Darrell M., and John R. Allen. *Turning point: Policymaking in the era of artificial intelligence*, Brookings Institution Press, 2020; Woolley, Samuel C., and Philip N. Howard, eds. *Computational propaganda: Political parties, politicians, and political manipulation on social media*, Oxford University Press, 2018.

promise in proportion to how accurate AI predictions become. AI and AI directed robots have proven formidable political agents during elections, persuading human consumers to purchase what they otherwise would not, and are the first technology in recorded history offering the capacity to compel through persuasion. Political regimes no longer need rely solely on the stick when the cost and efficacy of the carrot is near zero through AI directed computational propaganda, globalized internetworking technology, and humans carrying and using internet connected and AI surveilled devices in their pockets, backpacks, and purses.

To the extent that social engineering at societal scale using big data and AI is reality, the potential to influence or perpetually surveil a population at a granular level and with such detail has never before been available to governments, corporations, or individuals. This is a threat to liberal society and cuts right to the core.<sup>30</sup> These issues are also yet to be sufficiently accounted for by integrated deterrence strategy. Where nuclear weapons are a single use threat to destroy human civilization; AI and AI directed robots are a constant multi-use threat to that may hasten the descent from freedom to compelled conformity. To deliver on its promise, integrated deterrence, in addition to accounting for available power capabilities to deter state level adversaries, must also account for threats emerging from AI and robotics technologies that threaten liberal societies. How precisely to deter this threat represents a need for future research.

## Conclusion

Integrated deterrence, as presently conceptualized, is useful only if it takes into account its previous iterations – the ones used in the preceding decades or even centuries. Despite what may

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<sup>30</sup> Mark Coeckelbergh, *The Political Philosophy of AI: An Introduction*, John Wiley & Sons, 2022; Kate Crawford, *The Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence*, (New Haven: Yale University Press, 2021); Ryan David Kiggins, 'Social Production and Artificial Intelligence,' in *Towards an International Political Economy of Artificial Intelligence*, pp. 3-16, Cham: Springer International Publishing, 2021.

appear as a large number of historical examples above, this is really only a small sampling from the recent past. The key takeaway for policymakers and officials is to understand that deterrence takes many forms, and it has all been done before. To avoid mistakes, they must analyze these past iterations of deterrence and determine if it applies, or rather, how to apply it to present policy, technology, and security threats. Adapting a line from security practitioner Paul Martin, threats to a nation are dynamic and change over time; contemplating the future requires one to learn from history. In this context, this means considering old forms of deterrence that could plausibly re-emerge in new forms to deter new threats.<sup>31</sup>

Given the unique national security threats arising from artificial intelligence, robotics, and more generally, information technologies, along with continued conventional, and nuclear threats, integrated deterrence will require further development. Having noted the need for further research to address these newly emerging national security threats with focus on the challenges of AI, the threats from renewed challenges from Russia and China in this area, conventional, and nuclear forces, it would be wise for policymakers to understand how integrated deterrence has worked in the past. With this in mind, perhaps national leaders should be encouraged, when considering integrated deterrence, to heed the advice of President Eisenhower, who, when discussing how many nuclear missiles were needed to be a sufficient deterrent to Soviet aggression, pointed out that in the end ‘Deterrence is a matter of judgment.’<sup>32</sup>

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<sup>31</sup> Paul Martin, *The Rules of Security: Staying Safe in a Risky World*, (Oxford: Oxford University Press, 2019), 21, 43.

<sup>32</sup> John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of American National Security Policy During the Cold War*, (Oxford: Oxford University Press, 2005), 186.

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