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2221009

Cover photo: Candidates disassemble and reassemble an M4 rifle during Expert Field Medical Badge (EFMB) testing 30 October 2018 at Fort Bragg, North Carolina. The first week of testing introduces the candidates to all the tasks that they'll be expected to complete to earn the coveted badge. The EFMB was established to showcase and recognize medical soldiers for their exceptional skill level and competence in the medical field. The testing consists of a written exam, land navigation, three separate combat testing lanes, and a twelve-mile ruck march. (Photo by Spc. Liem Huynh, 22nd Mobile Public Affairs Detachment)

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A soldier completes a twelve-mile ruck march at the Sabalauski Air Assault School on Fort Campbell, Kentucky, 13 July 2022. The ruck march, which must be completed within three hours, and an equipment layout are the final tasks before graduation, when they will earn the right to wear the coveted Air Assault badge. (Photo by Spc. Robert Faison, 40th Public Affairs Detachment)

People buy the last remaining groceries at a Finnish PRISMA store 15 March 2022 in Saint Petersburg, Russia, as the store nears closing. The Finnish holding company S-Group, which operated sixteen PRISMA supermarkets and three SOKOS hotels in Saint Petersburg, decided to curtail all operations in Russia. (Photo by the Associated Press)

Economic Sanctions

Dr. Mark Duckenfield

The United States and its allies' recent imposition of an extensive array of economic sanctions on Russia in response to its invasion of Ukraine is the most comprehensive set of restrictions on a great power since the Second World War. Countries, most prominently the United States, have increasingly turned to economic sanctions and economic coercion to advance their international political interests in recent decades. Sanctions have an appeal because ideally they allow the sanctioner to pursue a political outcome short of the risks of armed conflict. At the same time, the targets of sanctions are not passive recipients. They have agency and engage in their own actions to avoid, mitigate, and overcome sanctions while continuing to pursue their objectionable policies. The consequences of sanctions, like other parts of a broader strategy, depend on their interaction with the adversary's actions and reactions.

As sanctions lack the brute force application of landpower, they are, at best, an indirect method of coercing compliance from the target. While much academic ink has been spilt over the years about the effectiveness of economic sanctions, all agree on the difficulty of isolating the effects of sanctions from other instruments of power.[1] Similar debates exist about the effectiveness of airstrikes, naval blockades, and military aid which, while exercises of military power, are also

typically indirect means to a broader policy objective. Diplomatic pressures such as international condemnation, United Nations resolutions, nonrecognition of forcible territorial changes, lack of cooperation in international organizations, bringing new members into an alliance, and recalling or expelling ambassadors all seek to signal disapproval, raise the price of a target state's undesirable policy, and punish bad behavior. All these endeavors attempt to alter the cost-benefit analysis of an adversary and coerce it into agreeing to more acceptable political outcomes. Sanctions are not an isolated policy; rather, in the best of circumstances, they are part of an integrated national—or multinational—strategy where the various parts reinforce one another toward a common goal.

Advocates of sanctions use a simple model of political behavior. In democracies, when the economy suffers, the incumbent party's political prospects decline, sometimes leading to a loss of power. In this view, if sanctions are imposed on a democratic government, its economy will decline and the public will be more likely to vote it out, so the theory suggests that the government will bring its policies into alignment with the sanctioning country rather than risk domestic political defeat. The situation is rather more complicated with an authoritarian government. Undemocratic leaders do not depend upon popular support for staying in power. Autocracies, moreover, frequently have a wide array of informational and societal controls that are absent in democracies, so they can blame any hardship their people suffer on external powers. Authoritarian governments have often been quite effective at using international sanctions to argue that they are defending their citizenry from the depredations of grasping external powers.[2] This has been a central element of the Cuban government's successful resistance to six decades of American sanctions.

To apply specific pressure on authoritarian decision-makers rather than the population at large, targeted "smart sanctions" have gained prominence since the 1990s.[3] Given the nature of their regimes, the governing structure and incentives in authoritarian societies are often not very transparent. However, if coercing countries can identify powerful individuals and groups in a target country, coercers can start exerting pressure on influential people in the target state to either convince the decision-makers in the target state to alter their policies or encourage their overthrow. The recent wave of sanctions on Russian oligarchs and their assets in western Europe aims to influence the Russian elite. Seizing hundred-million-dollar yachts and expensive Italian villas from shady oligarchs also has resonance with Western publics.

Economic sanctions are one method of coercion that states use to pursue their international political objectives. Sanctions typically aim to either deter an action, compel a change in behavior, or punish another state. As indirect measures, sanctions require the cooperation of the target state to comply. The target must change its policies or activities; the coercer is not exerting brute force to accomplish its goals. However, this passes the initiative for action into the hands of the target, not the coercer.[4]

When a country seeks to deter another, it seeks to prevent an action through the threat of an undesirable outcome or response. These threats could take a variety of forms from retaliation to effective resistance. Whatever the form, states that seek to deter must make threats that are credible and substantial enough to the target that they do not take the targeted action. The target state must believe that the consequences of acting are outweighed by the likely consequences. Deterrence is, as Dr. Strangelove pointed out, "the art of producing in the mind of the enemy the fear to attack."[5] Successful deterrence is notoriously difficult to identify as it is often not clear that a country intended a particular threat. Targets also have every reason to obfuscate their reasons for not following through to avoid public humiliation.[6]

If deterrence fails, or the targeted country pursues an undesirable policy or action, the coercing country can attempt to compel its compliance with sanctions. This usually puts greater demands on the target country as its compliance typically entails some form of public climb-down and change from previous policies that lacks the ambiguity of deterrence.[7] Countries will

Dr. Mark Duckenfield holds a joint appointment as professor of international economics at the Strategic Studies Institute and the Department of National Security and Strategy at the U.S. Army War College. He holds a BA from Swarthmore College and an MA and PhD from Harvard University. He has previously held positions at University College London, the London School of Economics, and the Air War College, as well as previously serving as the chair of the Department of National Security and Strategy at the U.S. Army War College.

face more serious damage to their international credibility if they accede to the demands of a long-term rival than if they grudgingly acquiesce to pressure from a traditional ally. As a result, in what Dan Drezner calls the "sanctions paradox," while a country is more likely to impose sanctions on its adversaries, sanctions often work best against allies.[8]

Finally, if both deterrence and compellence have failed, countries can use economic sanctions as punishment. This is the full realization of the deterrent threat of economic sanctions that might, in fact, be more expansive than what was originally threatened. In such circumstances, sanctions are not intended to change an adversary's policy; rather, they aim to deprive an adversary of resources over a protracted period. Again, the isolated influence of sanctions is limited, but that does not mean their use is without consequences. George Kennan argued in 1946 that

> it would be a mistake to overrate the usefulness of the economic weapons when they are used as a means of counterpressure against great totalitarian states, especially when those states are themselves economically powerful. … The Soviets would unhesitatingly resort to a policy of complete economic autarchy rather than compromise any of their political principles. I don't mean they are totally unamenable to economic pressure. Economic pressure can have an important cumulative effect when exercised over a long period of time and in a wise way toward the totalitarian state. But I don't think it can have any immediate, incisive, spectacular results with a major totalitarian country such as Russia.[9]

Obviously, the more states participate in sanctions, the more effective they can be because the target country has fewer options of avoidance.[10] Still, target countries are never passive recipients of sanctions. They pursue their own strategies to mitigate or circumvent sanctions imposed upon them. Economic sanctions do not simply happen in a vacuum. They often entail a vast coordination of diplomatic, informational, intelligence, and military activities to fully implement as well as respond to the avoidance strategies of the target. In addition to avoidance strategies, target countries might also have escalatory options available. These could range from countersanctions and diplomatic pressures to the use of military force. Both a targeted country and sanctioning countries might try and coerce each other into compliance with their political desires.

Paradoxical though it might seem, sanctioning another country also entails sanctioning yourself.[11] There are two parties in any transaction and while the target of sanctions might be denied access to goods or services, there is also a supplier or purchaser in the sanctioning country is large enough that is deprived of business opportunities or resources from the target. If the relative economic weight of the sanctioning country and alternative markets or sources are available to its companies, the economic consequences on it will be lower than those imposed on the target. But that is not necessarily the case. The failure of the West to ban the importation of Russian oil and gas, despite a massive sanction regime, is an acknowledgment that blocking Russian energy exports would hurt Europe more than Russia.[12]

Economic Coercion in Early American History

For Americans, economic coercion as an alternative to military force has deep historical antecedents that predate the founding of the republic. It also highlights the extent to which economic conflict can bleed over into precisely the military conflict it seeks to avoid. In 1765–66, during the Stamp Act Crisis, the majority of the American colonies met at the Stamp Act Congress in 1765 to coordinate their response, and those colonies that did not attend took note of the proceedings. Colonists across the United States ceased purchasing British goods with the explicit aim of creating economic discontent in Great Britain that would translate into political pressure for repeal of the objectionable legislation.[13] Local resistance also included violence, especially targeted at colonial revenue officials. The economic pressure from the colonies contributed to an economic crisis in Britain. British workers rioted, and British merchants testified before Parliament about the devastating financial consequences of the colonial trade boycott. Parliament, however, lacked an effective escalatory option. A member of Parliament challenged Benjamin Franklin, then a colonial lobbyist, during his testimony about how the boycotting colonists would deal with a military escalation to enforce the Stamp Act. Franklin presciently dismissed that solution by arguing, "Suppose a military force sent into America, they will find nobody in arms; what are they then

The destruction of tea at Boston Harbor. (Lithograph by N. Currier, 1846; image courtesy of the Library of Congress)

to do? They cannot force a man to take stamps who chooses to do without them. They will not find a rebellion; they may indeed make one."[14] Facing a united colonial resistance, severe economic pressure, and lacking an effective escalatory alternative, Parliament bowed to the colonial demands and repealed the legislation.[15] These strategies did not always succeed as subsequent boycotts of other odious colonial duties were neither as unanimous, widespread, nor effective as the Stamp Act boycotts, though they did deepen many colonists' political and economic resentment of imperial control.[16]

Economic pressure could also work in reverse as Britain sought to sanction the colonies. The Boston Port Act (1774), which closed Boston to external trade until Boston reimbursed the East India Company for tea destroyed in the Boston Tea Party, attempted to pressure the rebellious colony, but it precipitated the First Continental Congress and a retaliatory boycott on British goods from the colonies.[17] As both Britain and the colonies pursued policy changes that infringed on areas where each felt they were sovereign, the retaliatory combination of political and economic conflict between them spiraled into open rebellion.

In the first decades of the new republic, American policy makers with limited policy options available to them to redress political grievances sought to use economic sanctions. During the Napoleonic Wars, British and French interference with America trade, confiscation of cargos, and impressment of seamen led the Jefferson administration to pass the Embargo Act (1807) and cut off American trade with the outside world.[18] The British blockade effectively cut France off from American commerce regardless of U.S. policy. Britain had ready access to alternative raw materials from Latin America, and France welcomed the action as it not only harmed the British economy more than the French but also created more political friction between Britain and the United States.[19] The totality of the blockade proved counterproductive because it also sanctioned American commerce. Many Americans illegally shipped goods to Canada for transshipment to Britain, thus circumventing the embargo.[20] As a result, the embargo policy was an ignominious failure that harmed American economic interests, exacerbated domestic and international tensions, and failed to achieve an improvement in European treatment of the United States.[21] Subsequent American legislation, the Non-Intercourse Act (1809), relaxed the embargo and confined it solely to trade with

The League of Nations General Assembly meets in Geneva in September 1935 to focus on the conflict between Italy and Ethiopia. (Photo by Agence France-Presse)

the belligerents, Britain and France, but it remained just as ineffective as the Embargo Act and served merely as a precursor to the War of 1812. Attempts at nonmilitary solutions to international political disputes remained a staple of American foreign policy through the twentieth century to the present day.

Italy and the Ethiopian War

The Italian attack on Ethiopia in 1935 marked one prominent failure of international economic sanctions. As part of Benito Mussolini's ambitions for an Italian African empire, Italy invaded Ethiopia in a direct challenge to the League of Nations and the Versailles system. The League, led by the United Kingdom, sought to coerce Italy into halting its aggression and implemented the most extensive range of economic sanctions imposed in the interwar period. However, while extensive, the sanctions did not include oil and other key raw materials. Britain and France remained concerned about German resurgence and had reservations about completely alienating Italy from the Stresa Front, the anti-German alliance among Britain, France, and Italy signed in 1935.[22] Italy possessed, or at least threatened, other escalatory options. Mussolini declared that a closure of the Suez Canal or an oil and coal embargo would be considered acts of war. An Anglo-Italian armed conflict would have foreclosed the faint hope Britain might have held of retaining Italian interest in supporting whatever was left of the Stresa Front.[23]

In addition to these geopolitical complications, Britain and France anticipated that the United States would not honor League of Nations oil sanctions because it was not a League member and lacked a legal mechanism to limit trade. Domestic ethnic politics in the United States made any action problematic given its large Italian American population.[24] After the Italian invasion of Ethiopia, the mayor of New York City, Fiorello La Guardia, headlined a Madison Square Garden event "to show that every Italian who resides in the United States is ready to help Italy fight the brutal international coalition headed by England."[25] The Soviet Union and Romania, other major oil exporters of the time, were also unlikely to support an oil embargo.[26]

As a result, Italy was subjected to extensive economic sanctions which caused serious hardship but did not directly impede Italy's military operations. Italian exports fell between one-third and one-half, and industrial output dropped by over 20 percent in the months after League sanctions were imposed.[27] While the Italians faced economic hardship, the failure to impose sanctions on the most vital materials—oil and coal—fear of "sanction-busting" by the United States and other oil exporters, as well as Western geopolitical concerns about Germany, and the possible Italian escalatory threat proved fatal to attempts to stop Mussolini.

Japan and Pearl Harbor

Even when economic sanctions are devastating, credible, and extensive, the target might not acquiesce. The prospects and implementations of sanctions might be *too* successful and the adversary might choose to escalate militarily rather than comply. In 1941, Japan expanded its military operations from China into Vichy-controlled Indochina, turning the French colony into a de facto

The USS *West Virginia* and the USS *Tennessee* burn in Pearl Harbor after the Japanese attack on 7 December 1941. (Photo courtesy of the National Archives)

vassal of the Japanese Empire. The United States had already imposed a licensing regime on oil, though Japan had managed to obtain many licenses and built up an overseas financial war chest to finance its imports of military material. However, in a further effort designed to coerce Japan into withdrawing as well as deprive it of the economic resources necessary for further aggression, the Roosevelt administration froze Japanese assets in the United States in July 1941 and blocked Japan from spending dollars or gold with U.S. financial institutions. Even in the unlikely event that Japan was able to exercise its oil licenses, the asset freeze blocked Japan from paying for needed raw materials. Britain and the Netherlands followed with identical freezes, completing Japan's isolation from global markets.[28]

With access to its overseas financial assets cut off and blocked from financial markets, Japan faced the prospect of dwindling oil and other crucial raw supplies. In the face of dwindling stockpiles, Japanese leaders faced an unpleasant policy conundrum. They could back down and cease their expansion into Indochina and China, thus acknowledging their ongoing economic dependence on the United States and revealing their vulnerability to future iterations of economic blackmail. This humiliation meant surrendering their great power ambitions and playing a subordinate role to the West, particularly the United States. Having witnessed and exploited China's vulnerabilities over the previous decades, Japanese leaders had no desire to follow that path. Second, they could have suffered the consequences of economic isolation with its deleterious effects on the Japanese army in China and naval vulnerability to the United States. While not as quick a decline as capitulation, a similar outcome over time seemed likely. The third option involved seizing the raw materials of the Dutch East Indies to present the West with a fait accompli that might allow Japan to negotiate an acceptable peace that recognized an expanded Japanese sphere of influence in East Asia. However, the overwhelming material superiority that the United States and its allies could be brought to bear made this a risky option that was likely to lead to catastrophic failure.[29]

The diplomatic extent of the sanctions—which included the United States, Britain, and the Netherlands—as well as the economic sensitivity of oil, iron, steel, and other industrial inputs, made the sanctions devastatingly effective. The United States had also reinforced its naval and air forces in Hawaii and the Philippines as part of

British paratroopers move in to take airport buildings approximately five minutes after the first lift of the airborne assault on El Gamil Airfield, Port Said, Egypt, on 5 November 1956, during the Suez Crisis. (Photo courtesy of the Imperial War Museums)

an effort to bolster its military deterrent in the Pacific as well as expanding its financial and military support for the Chinese Nationalist regime. At the same time, the United States pressed the Japanese to withdraw from its Chinese and Indochinese conquests and distance itself from the Axis alliance.[30]

The case of Japan emphasizes how economic sanctions and efforts at coercion pass the choice of outcomes—however ill-considered they might be—to the target rather than the initiators of sanctions. Even in a case where the United States aligned its military, economic, and diplomatic instruments of national power in a clear and powerful policy of both coercion and deterrence, the target proved intractable, and sanctions became a prelude to war. Faced with three unattactive options, the Japanese leaders chose the riskiest and most aggressive option, launching an attack on the American fleet at Pearl Harbor and seizing the oil-rich Dutch East Indies.

The Suez Crisis

A prominent successful use of economic sanctions against allies occurred during the Suez Crisis in 1956. President Gamal Nasser of Egypt nationalized the Suez Canal Company, which was then one of the largest corporations in the world. Britain and France, whose governments had been the major shareholders in the company, strenuously objected to the expropriation to no avail. Both countries saw control of the Suez Canal as a vital national interest, with British Prime Minister Anthony Eden seeing it as the "windpipe" of the empire.[31] Nasser's move was popular across Egyptian society and the Arab world. Initial efforts at economic pressure on Egypt took the form of paying tolls for passage through the canal to a new Suez Canal Users Association rather than the Egyptian government. This soon collapsed when the United States withdrew from the arrangement, breaking the comprehensiveness of the economic sanctions on Nasser's regime.[32]

The United States and many other countries saw the Anglo-French military intervention as the return of gunboat diplomacy and exactly the sort of great power colonial politics that they thought should have been left behind. Middle Eastern countries embargoed oil to Britain and France and the United States indicated that it would not pick up the slack. The United States also intimated that it would interfere with Britain's access to International Monetary Fund loans. After the British finance minister, Harold Macmillan, told the cabinet (inaccurately) that the United States was undermining the pound on foreign exchange markets, the British government ignominiously backed down. The British and French governments (alongside Israel), while militarily successful in capturing the Suez Canal, ended up caving in and accepting Egyptian control of the canal. The extent of their interdependence with the United States made the economic pressure substantial. The close political and security relationships between the three Western allies in Europe meant that political acquiescence, while embarrassing, was likely to lead to an immediate cessation in sanctions and a return to precrisis economic conditions, thus preserving the

Gas prices are displayed at a gas station 1 June 2022 in Los Angeles. The national average price of regular unleaded gas in the United States soared to a record high of $4.67 per gallon and a further rise was widely expected over the next months. (Photo by Zeng Hui, Xinhua/Alamy Live News)

other fundamentals of their existing political and security relationships.[33] This case is an example of the effectiveness of sanctions on allies.

Sanctions and Russia

Countries that threaten or impose sanctions need to consider how sanctions fit into their broader strategic goals. The threat of further Western sanctions on Russia prior to the 2022 invasion of Ukraine were in the first instance designed to deter President Vladimir Putin from attacking his neighbor. The United States and its allies laid out an array of severe consequences for Russia's financial, commercial, and trade connections with the West in the event it engaged in renewed conflict in the Donbas. While some possible consequences were left ambiguous—the fate of Nord Stream 2 as the most prominent—it was clear that Russian pursuit of a military solution would trigger an immediate and comprehensive economic response. The threat of these sanctions, coupled with an extensive and impressive information campaign, diplomatic coordination, and military support, provided a clear message that aggression would be costly. The threat of sanctions formed a major pillar of Washington's strategy of deterrence.

However, it is not necessarily the case that the fear of the costs of an attack will outweigh the expected benefits. The military costs of invading Ukraine coupled with the threatened consequences of economic sanctions did not exceed the benefits that Putin anticipated from decisive military action. The unexpected military, economic, and diplomatic events since the Russian invasion of Ukraine have all defied expectations held prior to the start of hostilities. Ukrainian resistance has been extraordinarily successful and Russian military prowess much less effective than both Russian and Western governments anticipated before the start of hostilities. The extent of economic sanctions has been much more draconian than Western countries had originally signaled. The diplomatic denunciations of Russian aggression have also been harsher—in the United Nations, even more countries voted to condemn Russia's 2022 invasion than did its 2014 annexations (141 vs. 100), while fewer supported Russia (5 vs. 11) or abstained (35 vs. 58).[34]

Having failed to deter Russia, the imposition of sanctions enters a realm where the United States, its allies, and Ukraine might have divergent goals. While the West is unified in its imposition of extensive sanctions now, differing strategic end states among the powers involved may affect the cohesion and impact of the sanctions. If the goal is to compel Russia to halt its aggression, then communicating the promise of a major roll-back of sanctions to accompany a Russian pullback/withdrawal to the 2021 status quo would be an appropriate course of action. This might well be the preferred option for several European governments but might not align with that of the United States or Ukraine. However, Russia's blatant violation of Ukrainian sovereignty and international norms could

force a long-term reorientation of the West's relationship with Russia. Regardless of the fate of Ukraine, containing and isolating Russia may become the new focus of the West's European security policy. If so, then even if Russia halts its aggression, sanctions will remain, as the United States and many other NATO members have suggested. Of course, such a policy would provide Russia with no economic incentive to curtail its operations in Ukraine.[35]

Historically, sanctions on oil and raw materials are especially effective. The failure of the League to impose oil sanctions on Italy in 1935 likely doomed its efforts.[36] The devastating consequences of coordinated oil sanctions on Japan in 1941 coupled with the freezing of Japan's financial assets pushed Japan into war with the United States in order to seize oil facilities in the Dutch East Indies.[37] The shutoff of Arab and American oil and related financial pressures on France and the United Kingdom forced them into a humiliating climb down from their Suez adventure.[38] However, Russia is a major supplier of oil and gas. This poses serious problems for the West and the recent surge in energy prices across the world has put pressures on Western policy makers. In contrast, Russia is extremely reliant on foreign supplies of high technology products, especially for its advanced weapons systems.[39]

Russia's escalatory options are limited. The quagmire of its military involvement in Ukraine and its ongoing commitment of troops to that war have eroded the credibility of Russian conventional threats to NATO members. The accession of both Sweden and Finland into NATO has only strengthened the alliance. Russian threats of nuclear escalation outside Ukraine are effectively deterred by the American nuclear umbrella.

One area where Russia still retains the credible ability to escalate is in economic sanctions against the West.[40] While European economies are systematically moving to delink their energy infrastructure from dependence on Russian imports, they remain vulnerable. The European Union has limited Russian oil imports; however, in recognition that this would harm some members disproportionately, Hungary, the Czech Republic, and Slovakia, were exempted from the import embargo.[41] Europe is even more vulnerable to a reduction or embargo of natural gas—although it is most sensitive during the winter months. The International Monetary Fund recently warned that at a partial or total cutoff of Russian natural gas could tip European economies into recession. Russian gas deliveries to Europe have already dropped by 60 percent from June 2021.[42] The European Union can ameliorate some of the economic repercussions of complete curtailment of Russian natural gas shipments via increased liquefied natural gas imports, many countries in central and eastern Europe would suffer significant economic hardship, with a drop in GDP of up to 6 percent.[43] Russia would lose large amounts of revenue as the natural gas pipelines create a mutual dependency since they are fixed both for the European consumers and their Russia supplier. While not cost free, the Europeans have greater flexibility in finding alternative sources of energy if Russian oil and gas pipelines are closed than the Russians do in finding alternative customers, at least in the short and medium-term. Whether the Europeans (and Americans) have greater resiliency than the Russians in the face of hardship, higher energy prices, and a major economic downturn is not so clear.

Concluding Thoughts

The greatest concern regarding economic sanctions is likely the West's ability to maintain them for an extended period. Democratic societies require domestic support for their foreign policies, and they are sensitive to the economic costs their own sanctions might cause their populations. The onset of higher energy prices in part triggered by geopolitical concerns over Ukraine is unpopular across Europe and the United States. A prolonged period of expensive fuel, higher prices, increasing interest rates, and economic contraction will not bode well for the political prospects of democratic leaders. This might make it difficult to sustain such firm policies against Russia if the Ukrainian war drags on. It is by no means obvious that Western military assistance, which has been crucial in stemming the Russian advance, will be sufficient for Ukraine to prosecute the war to an acceptable conclusion. If the conflict becomes one of long-term attrition, economic difficulties in the West could mount and recessions could occur. This could lead to pressures for policies that will result in a conclusion to the war to reduce oil prices and stabilize Western economies. One scholar spoke about events two centuries ago in words that might have some applicability today: "Jefferson's greatest miscalculation was of his own people's willingness to endure economic hardship for the sake of principle."[44] It remains to

be seen whether the calculations of President Joseph Biden, President Emmanuel Macron, Chancellor Olaf Scholz, and Prime Minister Boris Johnson about their populations' endurance are more accurate. ■

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Notes

1. Gary Clyde Hufbauer et al., *Economic Sanctions Reconsidered*, 3rd ed. (Washington, DC: Peterson Institute for International Economics, 2007); Robert Pape, "Why Economic Sanctions Do Not Work," *International Security* 22, no. 2 (Fall 1997): 90–136, https://doi.org/10.2307/2539368; Kimberly Ann Elliott, "The Sanctions Glass: Half Full or Completely Empty?," *International Security* 23, no. 1 (Summer 1998): 50–65, https://doi.org/10.2307/2539262.

2. Hufbauer et al., *Economic Sanctions Reconsidered*; Daniel W. Drezner, *The Sanctions Paradox* (New York: Cambridge University Press, 1999), 66–68.

3. David Cortwright, George A. Lopez, and Elizabeth S. Rogers, "Targeted Financial Sanctions: Smart Sanctions That Do Work," in *Smart Sanctions*, ed. David Cortwright and George A. Lopez (New York: Rowman & Littlefield, 2002), 23–40.

4. Tami Davis Biddle, "Coercion Theory: A Basic Introduction for Practitioners," *Texas National Security Review* 3, no. 2 (Spring 2020): 102, http://dx.doi.org/10.26153/tsw/8864.

5. Peter George, *Dr. Strangelove: Or How I Learned to Stop Worrying and Love the Bomb* (London: Bantam Books, 1963), 96.

6. Biddle, "Coercion Theory," 102.

7. Ibid.

8. Drezner, *The Sanctions Paradox*, 33–35.

9. Giles D. Harlow and George C. Maertz, eds., *Measures Short of War: The George F. Kennan Lectures at the National War College, 1946-47* (Washington, DC: National Defense University Press, 1991), 10.

10. Hufbauer et al., *Economic Sanctions Reconsidered*, 57–59.

11. Ibid., 112.

12. Barry Eichengreen, "What Money Can't Buy: The Limits of Economic Power," *Foreign Affairs* 101, no. 4 (July/August 2022): 64–73, accessed 8 July 2022, https://www.foreignaffairs.com/articles/united-states/2022-06-21/what-money-cant-buy-economic-power.

13. Fred Anderson, *Crucible of War* (New York: Alfred A. Knopf, 2000), 682.

14. Ibid., 707.

15. Ibid., 653, 695–708; Edmund S. Morgan and Helen M. Morgan, *The Stamp Act Crisis: Prologue to Revolution* (Chapel Hill: University of North Carolina Press, 1995), 271–92.

16. John Shy, "The American Colonies in War and Revolution, 1748-1783," in *The Oxford History of the British Empire: Volume II, The Eighteenth Century*, ed. P. J. Marshall (New York: Oxford University Press, 2001), 312–13.

17. Kathleen Burk, *Old World, New World* (New York: Atlantic Monthly Press, 2007), 137–44.

18. George Herring, *From Colony to Superpower* (New York: Oxford University Press, 2008), 119.

19. Ibid., 119–20.

20. Ibid., 120.

21. Donald Hickey, *The War of 1812: A Forgotten Conflict* (Chicago: University of Illinois Press, 2012), 18–21.

22. A. J. P. Taylor, *The Origins of the Second World War* (New York: Simon & Schuster, 1961), 91–92.

23. Nicholas Mulder, *The Economic Weapon* (New Haven: Yale University Press, 2022), 217; Taylor, *The Origins of the Second World War*, 92.

24. G. Bruce Strang, "'The Worst of all Worlds': Oil Sanctions and Italy's Invasion of Abyssinia, 1935-36," *Diplomacy and Statecraft* 19, no. 2 (2008): 210–35, https://doi.org/10.1080/09592290802096257.

25. *Il Progresso*, as cited in H. Paul Jeffers, *The Napoleon of New York: Mayor Fiorello La Guardia* (New York: John Wiley & Sons, 2002), 234.

26. Strang, "The Worst of all Worlds," 216.

27. Nicholas Mulder, "The Sanctions Weapon," *Finance and Development* (June 2022): 20–23, accessed 12 June 2022, https://www.imf.org/-/media/Files/Publications/Fandd/Article/2022/June/Mulder.ashx.

28. Edward S. Miller, *Bankrupting the Enemy: The U.S. Financial Siege of Japan Before Pearl Harbor* (Annapolis, MD: Naval Institute Press, 2007), 191–92, 195–96.

29. Jeffrey Record, *A War It Was Always Going to Lose: Why Japan Attacked America in 1941* (Washington, DC: Potomac Books, 2010), 125–26; Miller, *Bankrupting the Enemy*, 241–43.

30. Miller, *Bankrupting the Enemy*, 257.

31. Anthony Eden, *Memoirs of Sir Anthony Eden: Full Circle* (London: Cassell, 1960), 474.

32. Diane B. Kunz, *The Economic Diplomacy of the Suez Crisis* (Chapel Hill: University of North Carolina Press, 1991), 112.

33. Ibid.

34. UN General Assembly, Resolution 11/1, Eleventh Emergency Special Session, A/ES/11/1 (2 March 2022); UN General Assembly, Resolution 68/262, Territorial Integrity of Ukraine, A/RES/68/262 (1 April 2014).

35. Daniel W. Drezner, "What is the Plan Behind Sanctioning Russia?," *Washington Post* (website), 1 March 2022, accessed 6 May 2022, https://www.washingtonpost.com/outlook/2022/03/01/what-is-plan-behind-sanctioning-russia/.

36. Strang, "The Worst of all Worlds," 202.

37. Record, *A War It Was Always Going to Lose*, 38–41.

38. Kunz, *The Economic Diplomacy of the Suez Crisis*, 143–52.

39. Eichengreen, "What Money Can't Buy," 73.

40. Emily Rauhala et al., "E.U. Accuses Russia of 'Blackmail' after Gas Cut to Poland and Bulgaria," *Washington Post* (website), 27 April 2022, accessed 18 July 2022, https://www.washingtonpost.com/world/2022/04/27/russia-gas-poland-bulgaria-eu-reactions/.

41. Jennifer Rank, "EU Leaders Agree to Partial Embargo of Russian Oil Imports," The Guardian, 31 May 2022,

accessed 20 July 2022, https://www.theguardian.com/world/2022/may/30/eu-nears-compromise-agreement-for-partial-ban-on-russian-oil.

42. Gabriel Di Bella et al., *Natural Gas in Europe: The Potential Impact of Disruptions to Supply* (Washington, DC: International Monetary Fund, July 2022), 6.

43. Ibid., 22–26.

44. Herring, *From Colony to Superpower*, 120.

A Ukrainian mural in Kyiv's Independence Square proclaims to the world in English a Ukrainian view on the country's future. In 2013–2014, protesters massed in Maidan against a Russian-sponsored dictatorship. Security forces opened fire on the protesters, killing scores. Maidan became a symbol of Ukraine's defiance of Russian interference and domination. (Photo courtesy of the author)

Russian Preinvasion Influence Activities in the War with Ukraine

Ian J. Courter

The February 2022 Russian invasion of Ukraine was unsurprising to many longtime analysts and regional experts as the conflict fit a clear pattern with roots going back centuries. Furthermore, a broad swath of academic and military literature published since the 2014 Russian takeover of Crimea and the proxy war in Donetsk and Luhansk describes in detail the specific activities and methods the Russian government would likely use.

Current U.S. and allied military doctrine, academic publications, and journalists use a variety of labels for state-conducted influence efforts. Much of the literature

this article cites includes terms like hybrid warfare, information warfare, information operations, political warfare, and equivalents for activities executed to affect and shape the behavior of individuals and groups. For simplicity and clarity, this article uses the general term influence activities to describe Russian efforts.

There are two aspects of prewar preparation that aid understanding of Russian influence in the current conflict. First, Russia's government employed a well-established methodology to set conditions. Analysis of a wide range of publications shows a consistent and predictable pattern that helps demystify Russian operations.[1] A key point about Russian influence is *the primary target is always the Russian population, both inside and outside of the Russian Federation*. All other targets are secondary and not necessarily to be persuaded but rather neutralized as impediments to achieving objectives.[2]

Second, Ukraine is a special case where its ancient linguistic, cultural, and religious ties to Russia arguably surpass those of any others among the Slavic nationalities. Therefore, the depth of Russian attention and the levels of vitriol directed toward Ukraine likely exceed what other countries experience.

Finally, the following discussion is a preliminary analysis of a war barely a few months old. Future research and analysis of Russian influence activities may alter some of the points raised. Still, it is highly unlikely Russian actors will significantly deviate from traditional methods and techniques as they are deeply ingrained and difficult to alter; organizations and processes tend to take on their own momentum and resist change. Russian military failures to date suggest a range of entrenched processes that defy change, to include influence activities.

Context

The idea of employing influence activities in military operations against an opponent is very old, but there is nothing particularly "hybrid" or irregular about such integration than what exists in traditional warfare.[3] While categorizing hybrid and the other supposed types of warfare as distinct forms may be debatable, the idea of required areas for success in modern warfare is not: the conventional battleground, the indigenous population, the "home front," and the international communities.[4] Prior to the invasion, the Russian government saturated all areas as part of a concerted, integrated effort to place itself in the most advantageous position possible, but the home front was most important. Russia inherited this methodology from the Soviet Union, so it is unsurprising the current regime employed it.[5]

When the Soviet Union dissolved in December 1991, the successor Russian Federation lost its status as a world superpower in both concept and in real terms; other than possessing nuclear weapons, the new Russian state was a third-rate power at best. To compensate and retain any chance of achieving foreign policy objectives, and upon appointment as acting Russian president in 1999, Vladimir Putin began a modernization of Russian military capabilities. Nevertheless, aside from newer delivery platforms and employing the most recent communication technologies, the basic Russian influence tactics, techniques, and procedures remain consistent with the past, but executed far more aggressively.

Russian aggression makes its influence activities dramatically different from those of free and open Western countries. Old cultural beliefs coupled with inherited Marxist-Leninist thinking about Western threats means that leaders in Moscow firmly believe that they are engaged in an ongoing war where entire social structures and the minds of populations are appropriate targets.[6] It is a total and zero-sum war in which all options are potentially viable. Consequently, Russian influence actors execute operations with a nearly complete disregard for international rules of conduct and norms.

Instead of viewing influence activities as a military operation or even a whole-of-government activity, Russian leaders appear to adhere to a totalitarian model where the ruling elite work to mobilize any and every part of society that can aid the effort. Instead of Marxist-Leninist ideology,

Ian J. Courter is an analyst and psychological operations (PSYOP) doctrine developer for the United States Army John F. Kennedy Special Warfare Center and School. He holds a BA from Murray State University and an MA from Southern Illinois University at Carbondale. Courter is a prior service PSYOP soldier and linguist with numerous deployments to South America, Europe, and the Middle East to conduct influence activities as part of counterinsurgency, major combat operations, and peacekeeping.

A Soviet World War II propaganda poster portraying the Soviet conquest of Polish Ukrainian ethnic-majority areas as liberation. The Ukrainian text reads, "We held out our hands to our brothers for them to straighten their backs and to throw the despicable kingdom of whips into the darkness of the ages." The Soviet soldier is striking a caricature of a Polish soldier as two stereotyped Ukrainians escape. (Photo courtesy of Wikimedia Commons)

now the unifying construct is shared Russian ethnicity. Mobilization includes recruiting civilian individuals and groups residing in Russia and those in the Russian diaspora around the world. As of early April 2022, recruitment efforts reportedly convinced over twenty-eight thousand Russians to join the online effort against Ukraine.[7] Historic patterns show Russian leaders appeal to patriotic feelings that feed on long-standing cultural beliefs, even paranoia that Russia is isolated and subjected to foreign power persecution and targeting. For these reasons, any description of Russian influence activities leading up to the invasion cannot focus solely on the military component but must address the wider Russian view to be informative.

Russian views on conflict illustrate how they view peace and war as having no distinction, merely a state of perpetual conflict that varies in intensity at any given time and across numerous simultaneous operations.[8] Furthermore, Russian influence activities directed against opponents are fundamentally destructive, especially in the case of democratic and liberal societies that represent an alternative to autocracy and dictatorship.[9] Liberal democracies are disadvantaged due to adherence to rules-based systems of behavior as a defining characteristic. Autocracies such as Russia do not adhere to such restrictions, so they have an inherent advantage compared to Western opponents.[10] Leaders in Russia and the United States may share the common goal of influencing each other, but their thinking and many of the means used are so different they almost defy comparison.

Russian leaders also believe they have both a right and requirement to involve themselves in neighboring countries (what they term as "The Near Abroad"), especially ones formerly part of the Russian Empire and the Soviet Union. Among former Czarist and Soviet territories, Ukraine holds a unique position above all others. Ukraine, specifically the capital Kyiv, comprises the heart of the ancestral ancient Rus state and is where the Russian Orthodox Church began. However, Ukrainian identity and culture diverged from the original Kievan Rus and from the equally divergent Russian identity and culture. In fact, significant parts of modern Ukraine like the oblasts (provinces or regions) of Lviv'ka, Zakarpats'ka, Ivano-Frankivs'ka, and Chernivts'ka only more recently fell under Russian domination (1939–1941/1945–1991). Before those relatively brief periods, for centuries they were Polish, Austro-Hungarian, and Czechoslovakian territories.

Western Ukrainian exceptions aside, the profound cultural and religious ties most of Ukraine has with Russian society and culture perpetually marks it for special attention. The loss of other former Soviet republics like the Baltic, Caucasus, and Central Asian states was a blow to Russian national pride, but the loss of Ukraine struck at the core of Russian perceived identity and being. To many Russians, the profoundness of Ukraine's loss may be comparable to how many Greeks feel about the loss of Constantinople (modern Istanbul) and Jews regarding Jerusalem.

While Russian leaders have actively interfered in Ukrainian internal affairs since 1991, they have usually been careful to maintain at least the illusion of plausible deniability. Denial was a key tactic in 2014 where Moscow disavowed the presence of Russian forces (little green men) in Ukraine's eastern provinces when evidence clearly showed they were there. Also, Russia has used a combination of cyberspace operations and disinformation to rewrite history, reinterpret culture, and other factors for specific goals and objectives.[11] The current conflict appears to be no different.

In terms of overt activities, Russian messaging has traditionally exploited the psychological effects of military exercises to influence internal and external targets, demonstrate possession of a credible military, and deter opponents. More importantly, Russian leaders have repeatedly used exercises to mask preparations for military operations.[12] Numerous Western analysts and intelligence public releases asserted in late 2021 that ongoing Russian military exercises were likely cover for an attack, which subsequently occurred on 24 February. Russian officials were careful to call the attack a *special military operation* rather than an invasion. Most in the West rejected the distinction, but widespread media reporting suggests that large numbers of Russians appeared to at least initially accept this framing of the invasion, a possible indicator of the effectiveness of Russian influence on domestic populations.

Influence Types

Influence activities in a conflict scenario are frequently psychologically affective in that their purpose is more than just persuading a target to change a belief or attitude. Messaging in wartime frequently consists of unifying and destructive efforts, the latter includes divisive messaging. Unifying messaging serves to solidify domestic or potentially sympathetic external support and promotes active participation in the war effort or at least minimizes dissent and opposition. Destructive efforts consist of the most psychologically corrosive efforts where deliberate actions and deception are integral and inseparable from typical messaging.

Previous Russian actions against Ukraine involved the application of any relevant military, informational, political, and economic means to achieve objectives. Russian influence activities increased dramatically in the last ten years as Ukrainian leaders and large segments of the population increasingly looked west for their future. A large component of those activities has been through official Kremlin propaganda outlets to promote Russian ideology and the grand idea of a Russian world that fully absorbs Ukraine.[13]

One of the key tools Russian leaders use is deception, much of which aligns with Magruder's principle, which maintains it is far less difficult to deceive a target within an existing belief than attempting to do so through acceptance of a new opposing or different belief.[14] Internally, deception shapes Russian thinking to increase already strong cynicism about the world and strengthen existing distrust of government organizations, encourages existing tendencies to believe conspiracies, and erodes beliefs in Western liberal institutions as viable alternatives to current Russian government structures. Specific psychological effects sought include apathy, political malaise, general distrust, and heightened paranoia.[15]

In a similar way, Putin's objectives for foreign targets are less about convincing and persuasion to elicit support for Russia and more about increasing doubt and uncertainty, fomenting turmoil, and exploiting any distrust and divisions between competing groups within and among states opposing Russian actions, particularly within and among NATO and European Union countries.[16]

Targets

A critical task in conducting influence activities is the matter of selecting targets. Persuasive actions and messages are typically far less effective if they fail to exploit the unique vulnerabilities of a particular individual or group. Selective and precise targeting simply yields more predictable results. For influence activities in general, targeting is the foundation of influence in the same way that populations are central to modern warfare. So, targeting ethnic Russians with appeals to unity, Russian-speaking Ukrainians with messaging to confuse their national identity, and Ukrainians with demoralizing messages to erode morale all serve different near-term objectives but serve the long-term objective to decrease resistance to Russian actions.

Readers unaccustomed to thinking from an influence perspective tend to identify Ukrainians as the

primary targets. As stated earlier, Russian propagandists first look at internal targets—internal in the sense of being ethnic Russians regardless of their location. Russian propagandists make no distinction between Russians residing in Russia proper and those living in Ukraine or anywhere else in the world. Russian television and radio sources treat Ukrainian national boundaries as arbitrary and irrelevant since the reach and programming content make no distinction between internal and external Russians.

The proliferation of internet-based information sources has only increased Russian media reach and saturation. Russians in Crimea and Russians in Eastern Ukraine receive much of the same messaging as Russians inside the Russian Federation.

Evidence of Russian-focused targeting may lie in the messages calling opponents fascists and Nazis. Those labels appear to have far less impact on non-Russian populations in that part of Europe than for Russians since the negative connotations have been so ingrained in each upcoming generation of Russian youth. Propagandists intended those appeals mostly for Russians in Ukraine to mobilize more active participation among the Russian diaspora.

In contrast, *from the ethnic Ukrainian historical perspective*, forced russification, centuries of oppression, mass deportations, and Soviet (read Russian) atrocities during forced collectivization and mass starvation in the 1920s and 1930s may rival anything the Nazis did during World War II. Russian influence attempts using Nazi and fascist references are far less likely to affect Ukrainians than counter messaging reminding Ukrainians how badly Russian authorities have historically treated them. In a twist on Magruder's principle, any examples of Russian brutality in the current conflict may only reinforce existing Ukrainian beliefs.

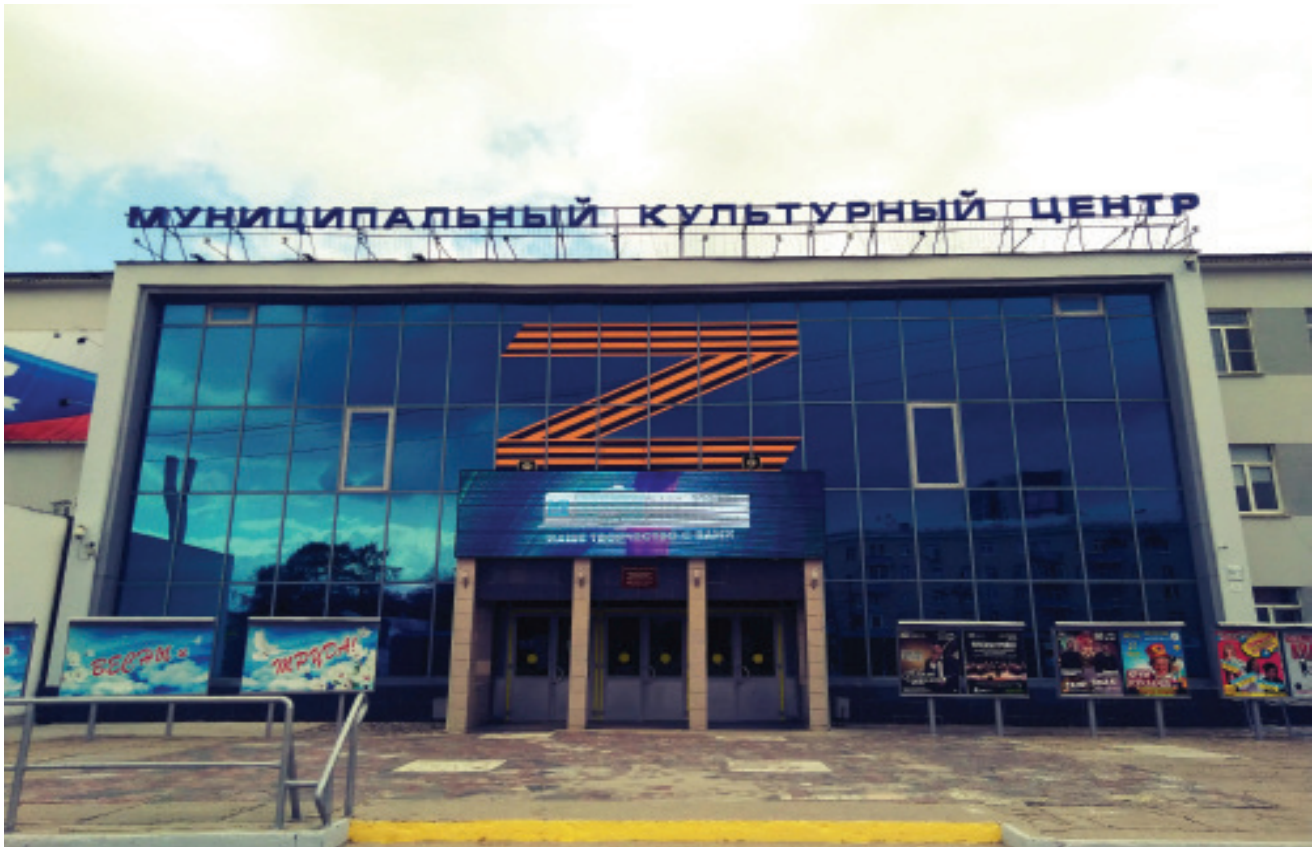
Aside from influence directed at ethnic Russians, Ukrainians have been a close second in focus for years. A key Russian objective for that focus has been to suppress any sense of a separate identity and patriotism in young Ukrainians.[17] Russian messaging over the last several decades reflects that and related objectives include ideas that *Ukraine is an artificial construct* and *Ukrainian is not really a separate language*.[18] The implication is that Ukraine and Ukrainians are just outgrowths of Russia rather than related, but separate and distinct.

> A key Russian objective … has been to suppress any sense of a separate identity and patriotism in young Ukrainians. Russian messaging over the last several decades reflects that and related objectives include ideas that *Ukraine is an artificial construct* and *Ukrainian is not really a separate language*.

Objectives

Ethnic Russian-focused objectives are primarily unifying and mobilizing in nature to achieve greater levels of support for Russian actions and unity. Achieving objectives among internal Russian populations and the foreign diaspora is comparatively easier than with non-Russians for the simple fact that appeals from Russian sources resonate with ethnic Russians who frequently feel set apart from local majority non-Russian populations. Decades of Russian propaganda appear to have significantly shaped the minds and perspectives of Russians in other countries. Psychological vulnerabilities resulting from a sense of isolation (self-induced or otherwise), perceived persecution, and other factors make them fundamentally more susceptible to Russian influence efforts.

Russian authorities have also purposely sown discord between local populations in neighboring countries and ethnic Russians residing there in the hopes of eliciting a backlash that Russian authorities can cite as proof of persecution and serve as justification for intervention on their behalf (a false flag type of tactic). Russian rationalizations for the 2014 seizure of Crimea and interventions in Donetsk and Luhansk are examples of this tactic where false allegations of Ukrainian atrocities against ethnic Russians provided



The Ryazan Municipal Culture Center displays the "Z" symbol on 2 May 2022. The Z symbol began appearing throughout Russia as a sign of support for the claimed effort to "liberate" fellow Russians and aligned with the liberation theme, denazification efforts, and other propaganda claims. (Photo by Alexander Davronov via Wikimedia Commons)

justification. Russian media even disseminated faked imagery as supposed proof of Ukrainian actions.

The objectives in Ukraine-type operations can include mobilizing ethnic Russians in a foreign population, increasing support in Russia for external intervention (if required), and forcing specific changes in foreign nation behavior that favor Russia. Several recent journal publications on regional security discuss these types of objectives and Baltic governments' concerns about Russian agitation efforts among minority Russian populations in those countries.

Objectives applied to non-Russian targets superficially appear to include persuasive messaging to garner sympathy for Russia but on a deeper level seem more devoted to creating division and disunity in other countries aligning with Ukraine. In other instances, possible objectives may be sowing confusion through misdirection, eliciting slowed reaction time to Russian actions, and keeping opponents off balance.

Decades ago, anti-Soviet Russian military theorist Evgeny Messner described similar objectives as lowering morale through decreasing an adversary nation's unity, eroding opponent nation capabilities required for resistance, neutralizing centers of gravity having psychological value, taking or destroying vital objects, and gaining new allies while dividing an opponent from its allies and fracturing the alliance itself.[19]

A central feature of war in the modern era is that populations are the critical requirement above all others. A failure to influence key populations to some advantage significantly affects, if not determines, success or failure. Messner's list of objectives aligns with the modern population-centric understanding of warfare. Russian leaders are also very aware of this reality and attempt to operate within that context while remaining capable in traditional warfare.

Primary Themes

Russian preparatory themes promoted a glorified and highly selective reading of history that emphasized supposed Russian inclusivity regarding non-Russians,

especially Slavic brethren in the historical Russian-led states, united economic progress and scientific advancement, and Russia's central place in the Slavic world with a status of first among equals.[20] In making these claims, Russian propagandists ignored historical realities of military conquest, forced russification, and the violent repression of any dissent and resistance to Russian dominance.

Putin's regime relies on nationalist themes and narratives to persuade ethnic Russians that a state of siege exists so the government can use oppressive methods to protect the nation against threats, both internal and external. The same themes and narratives also provide justification for external wars and sacrifices in the near abroad to maintain friendly buffer states that create a layered defense against external threats.[21] In the latest conflict, the Russian military inadvertently created a key symbol in the non-Cyrillic letter Z painted on invasion vehicles that came to embody Russian forces and the operation in general. The Z symbol began appearing throughout Russia as a sign of support for the claimed effort to "liberate" fellow Russians and aligned with the liberation theme, denazification efforts, and other propaganda claims.

"The Z symbol began appearing throughout Russia as a sign of support for the claimed effort to 'liberate' fellow Russians and aligned with the liberation theme, denazification efforts, and other propaganda claims."

While the Z symbol was a potent symbol for Russians as a unifying theme, themes concerning non-Russian targets are the most strident in tone against one border state in particular—Ukraine, the result of the previously discussed key historical factors.

Of all the former Soviet republics within the family of Slavic peoples, Ukraine has probably been the most frustrating for Russian leaders as the country slipped increasingly out of Moscow's control and influence in the 2000s. Those frustrations echoed in threats and intimidating actions that only increased in number and intensity before the invasion. Putin's statements and official Russian media were the foundation from which all other supporting influence efforts drew their themes and messages. Russian state media parroted Putin's list of demands and repeated threats against Ukraine if those demands remained unmet.[22]

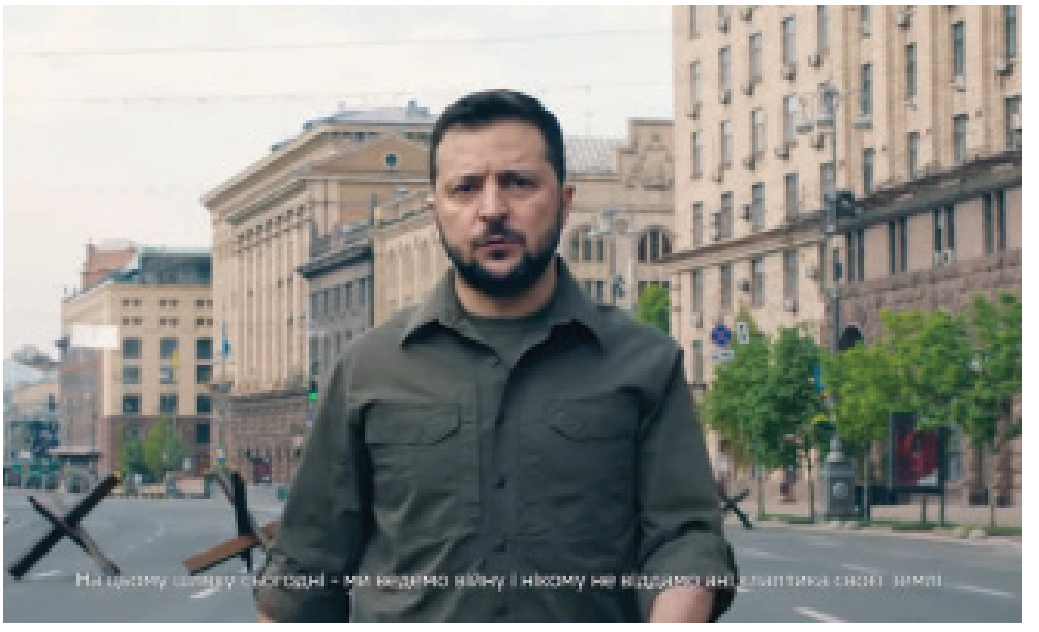
One of the key themes about Ukraine that Russian propaganda pushes is the idea Ukraine itself, the language, and culture are nothing more than products of Russian history and culture. This theme has roots in the centuries-old russification efforts to destroy Ukraine as a separate and distinct society and culture.

One of the most contentious issues regards the Russian and Ukrainian Orthodox churches. Distorted myths portray the Russian struggle as protecting orthodoxy, maintaining the unity between a single people and their church, and reinforcing the argument Russians and Ukrainians are one people. Russian messaging has continuously attacked the Ukrainian church as illegitimate unless subordinated to the Moscow-based Russian Orthodox church.[23]

Past Russian justification for the annexation of Crimea and interference in Ukraine's internal affairs included statements about shared religion and culture. Once the Ukrainian church declared independence from the Russian church after 332 years, the Russian church and the government claimed the departure was illegitimate.[24] Two key parts of the Russian argument are that the Moscow-based church has held legal authority over the Ukrainian church since 1686 and, perhaps most importantly, Kyiv is the birthplace of the Russian church, so the two are inseparable.[25]

Another theme is military focused. In previous military exercises, messaging emphasized Russian military advances in command and control, communications, the ability to execute complex, multiprong operations and effectively combat the actions of advanced military competitors with a modern military-industrial system in place to ensure wartime continuity.[26] The obvious psychological effects of *perceived* capability cause increased concern among governments around the world about Russian intentions and capabilities as a

supposed superpower. Yet, any misgivings and fears Russian influence activities had generated rapidly disappeared once the invasion forces began suffering horrendous casualties (including twelve generals as of June 2022), substantial equipment losses, lost momentum, and otherwise demonstrated incompetence that numerous ex-military media consultants compared to third world militaries. The myth of Russian military prowess was shattered and Russian themes touting capabilities seem to no longer guide messaging significantly.



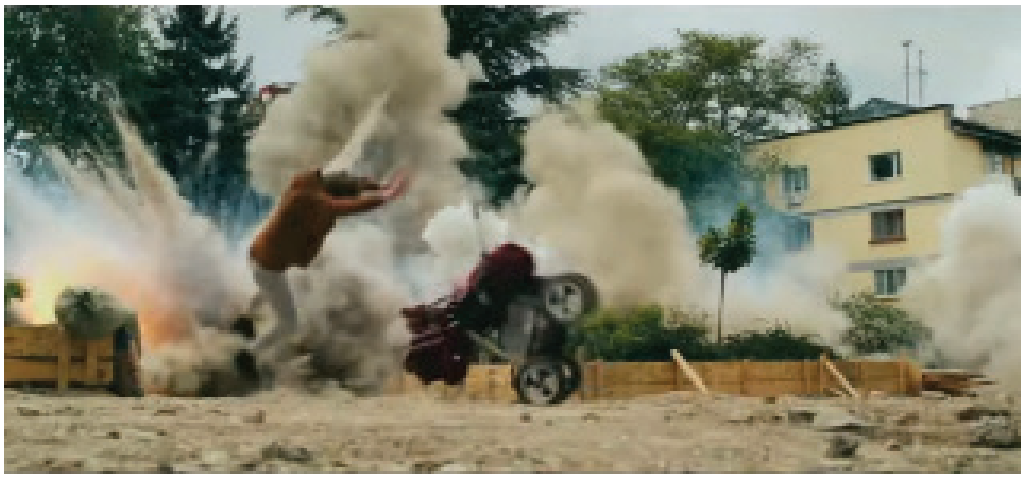
A video shows Ukrainian President Volodymyr Zelensky walking through the streets of Kyiv as he delivers a May Day message to the Ukrainian people. (Screenshot from UATV via YouTube)

As previously mentioned, one theme that shows no signs of dying out in Russian messaging is Nazism/fascism. At the beginning of the twenty-first century, Estonian analysts noted the use of this powerful theme directed toward Russians.[27] It draws upon the powerful imagery and emotions instilled in Russians from an early age about the World War II fight against Nazi Germany in which over twenty million Soviet citizens died.

A vital part of Russia's anti-Nazi narrative concerns the fact that in much of the Soviet non-Russian territory that German forces held in the war, there were large numbers of local collaborators who actively worked against and fought to prevent Soviet reconquest. Such was the apparent hatred many people in the Baltic republics, Ukraine, and Belarus had for the Soviet Union in general and Russians in particular, that after the war numerous insurgencies continued resisting Soviet rule well into the 1950s. Current Russian propaganda exploits the fact many anti-Soviet resistance heroes from that period collaborated with or fought for German forces, such as Ukrainian Stepan Bandera. Several resistance leaders were also anti-Semitic, which provides further Russian justification for labeling current adversaries as Nazis. Russian propagandists then simply portray populations in those countries as still harboring Nazi sympathies.[28] Putin's regime used the theme and narrative during the 2014 Crimea and Eastern insurgency and widely invoked it again prior to the 2022 invasion.[29]

All of this is not to say independent former Soviet states do not commemorate the defeat of the Nazi regime. Ukraine has traditionally held a parade every May to memorialize the loss of Ukrainians in the war. In response to the Russian claims, Ukrainian President Volodymyr Zelensky spoke on UATV, an official Ukrainian government YouTube channel, and directly called upon Ukrainians to "take back" the May Day commemoration. "We are fighting for our children's freedom, and therefore we will win. We will never forget what our ancestors did in World War II, which killed more than eight million Ukrainians. Very soon there will be two Victory Days in Ukraine. And someone won't have any. We won then. We will win now. And Khreshchatyk will see the victory parade–the Victory of Ukraine! Happy Victory over Nazism Day! Glory to Ukraine!"[30]

The final theme and accompanying messaging involve one area in which Russia surpasses all other powers in the world—nuclear weapons. Shortly before the COVID-19 pandemic erupted, Russia conducted large-scale nuclear drills in October 2019. This coincided with unusually open pronouncements about tests



A screenshot from *Solntsepyok*, a Russian propaganda film set in the Donbas intended to evoke an emotional reaction toward Ukraine by accusing Ukrainian forces of atrocities against ethnic Russians. (Screenshot from Kinoman via YouTube)

of Russian hypersonic weapons. Specifically, Russian leaders, influencers, and domestic mass media communicated that Russia was ready to escalate nuclear warfare as needed, was integrating strategic and tactical nuclear weaponry into planning, and ongoing modernization was making it the predominant nuclear power in the world. This implied Russian leaders were able and willing to wage full-scale nuclear war.[31]

Execution

A revolution in Russian influence activities seems to have accelerated following the 2008 Russian intervention in Georgia. Since then, the activities have advanced beyond the comparatively primitive Soviet approach of the Cold War. Russian propagandists still use Soviet-style ambiguity and confusion, but the sheer number of communication means and platforms combined with overt use of half-truths, blatant lies, and a complete lack of concern for consistency all far exceed anything prior.[32] Individual messages seldom exist in isolation, but reside within a framework of a greater influence effort to create psychological effects in targets.[33] Contemporary Russian influence methodology includes traditional media of television, radio, and newsprint as well as more recent internet-based platforms like Facebook, YouTube, and Instagram, using bots and trolls that spread misinformation and disinformation to destabilize and demoralize opponents.[34]

All things considered, current Russian influence activities are a continuation of Czarist and Soviet thought but have evolved far beyond in reach and capability. A siege mentality, the belief in perpetual conflict, even the belief that war with the West is the normal state of relations combine with a legacy of Soviet political warfare and propaganda to create a state and culture that has few equals in the refinement of propaganda techniques and effectiveness.[35]

Before, during, and after the 2014 Crimea campaign, Russian messaging primarily focused on the home front, then Crimean Russians.[36] Secondary targets included Ukrainian Russians, Ukrainians, and then all others in that order. This spectrum of targets conforms to predictable patterns that primarily focus on ethnic Russians to justify and maintain support for operations in Ukraine or elsewhere. Russian media mirrored official themes and messaging in attacking Ukrainian opposition, both official and civil society by labeling them extremists, terrorists, Nazis, and fascists.[37] The use of specific words with strong emotional connotations exploits the Russian fixation on the "Great Patriotic War" (World War II) that still weighs heavily on the national psyche after nearly eighty years. Much of the messaging reaching external actors with such terms are not intended for non-Russian as they lack any real weight, but many Russians in foreign countries are susceptible to such imagery, especially older generations.

Russian influence efforts transcend governmental activities and comprise the whole-of-society strategy previously mentioned. As late as August 2021, top Putin supporter and billionaire oligarch Yevgeny Prigozhin bankrolled the propaganda film *Solntsepyok* (*Sunbaked*) supposedly to glamorize his alleged private mercenary force (the Wagner Group) accused of war crimes in overseas Russian proxy operations.[38]

The overt message in the video is likely an attempt to evoke emotion, but there is often a subtle, less obvious

message in Russian influence that outsiders typically miss. In this case, the intent of the film could be to send a chilling message to residents of eastern Ukraine where the film takes place and to people from that culture who intuitively understand such messaging. Due to the Wagner Group's reputation for war crimes, a probable deeper message is to inspire terror in everyone in the east of the country to minimize potential resistance and maximize compliance—obey or face the Wagner Group. Before the movie's release, producers circulated an enigmatic trailer with a description that read, "Events will totally transform the lives of many people. Who will be broken by the new reality, and who will remain a human being until the end?"[39] This is only one example of innumerable messaging and influential activities Putin has directed against Ukrainians, both ethnic Ukrainians and ethnic Russians.

Concluding Thoughts

Determining success or failure in influence activities is more nuanced than mass media and governments acknowledge, and most may even understand. To increase understanding of those nuances, this article emphasized two primary Russian targets in the so-called information war—Russians and Ukrainians. This is not implying other targets, such as Europeans in NATO and the European Union, the United States, Asian powers, and others are irrelevant—they are just much lower priorities. Russian leaders will claim success if they are able to frustrate and slow other external actor responses to Russian actions. The home audience and the opponent are the immediate priority.

Western media and governments may claim success at competing with and supposedly frustrating Russian external messaging and achievement of objectives. However, even if true, it is irrelevant in an important way. Russian leaders are generally unconcerned about persuading and convincing non-Russians to change their beliefs and attitudes. Russian strategists seek to confuse, divide, and otherwise redirect non-Russian focus and resolve—anything beyond that is a bonus. Russian leaders primarily look to positively influence *Russians* to support the war effort and stifle internal dissent.

Western claims of thwarting Russian influence activities and objectives are both premature and, in a sense, immaterial. Available evidence suggests Putin's regime has been successful so far at both containing internal dissent and maintaining internal support for the war effort.[40] Even if only a slight majority of Russians support the war effort, effective suppression of internal dissent and opposition is success in Putin's likely view. That is exactly how the regime will probably frame the results in the end. Even so, there is evidence that while many Russians may oppose the war, they may not oppose Putin personally. The regime seems to keep a substantial amount of support despite ongoing setbacks since the invasion began.[41]

Another point is that it is possible highly skilled Russian propagandists are convincing westerners they are successfully countering Russian influence abroad. Convincing targets of this notion diverts attention away from the Russian primary goal of coalescing internal support. This fully aligns with the old Soviet notion of reflexive control where an enemy conducts a Russian-induced action all while believing it is doing so out of choice.

A final point to make is the lack of evidence in the psychology field whether malign influence elicits desired psychological effects among targets and what such effects would be.[42] There is a widespread assumption that malign influence affects targets, but there is no clarity as to how and to what degree or extent.

The lack of psychological evidence may be best illustrated by the Ukrainian response to Russia's attack. Prior to the invasion, the consensus appeared to be Russian influence efforts had a decidedly negative effect on Ukrainian morale and cohesion—Ukraine would fold in a matter of days. Once the actual invasion occurred, Ukrainian resistance surprised everyone, probably none more than the Russians. Zelensky and his administration adeptly countered Russian influence among ethnic Ukrainians and even reached into Russia to some degree. However, there is anecdotal evidence significant numbers of ethnic Russians in Ukraine succumbed to Russian influence. The current lack of verifiable data prevents definitive confirmation or refutation, but the Ukrainian government instituted population movement control in an apparent attempt to limit potential ethnic Russian fifth-column saboteurs and insurgents. Such concerns are valid as it is a long-standing Russian practice to recruit and use external Russian populations in foreign countries as needed.

As for Russian failure to overcome Ukrainian resistance, it may be the Russians began to believe their own propaganda to the point it was delusional, such as the apparent surprise felt when Ukrainians did not welcome Russian forces with open arms as was widely believed would happen. It is uncertain how many of the points raised here will continue to be plausible into the future as each side adapts to the other and modifies their efforts. It is a certainty that influence activities will continue to be fundamental to the ongoing conflict and beyond. ■

Notes

1. Mikael Weissmann, "Hybrid Warfare and Hybrid Threats Today and Tomorrow: Towards an Analytical Framework," *Journal on Baltic Security* 5, no. 1 (2019): 17–26, accessed 10 June 2022, https://sciendo.com/article/10.2478/jobs-2019-0002; George F. Kennan, "The Sources of Soviet Conduct," *Foreign Affairs* 25, no. 4 (July 1947), accessed 10 June 2022, https://www.foreignaffairs.com/articles/russian-federation/1947-07-01/sources-soviet-conduct.

2. Bettina Renz, "Russia and 'Hybrid Warfare,'" *Contemporary Politics* 22, no. 3 (2016): 295, https://doi.org/10.1080/13569775.2016.1201316.

3. Ibid.

4. John J. McCuen, "Hybrid Wars," *Military Review* 88, no. 2 (March-April 2008): 107, accessed 10 June 2022, https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/MilitaryReview_20080430_art017.pdf. Note: The cited article combined the *home front* and *international communities* and counted the total as three areas. This article distinguishes between the two and counts four areas.

5. Jolanta Darczewska, "The Anatomy of Russian Information Warfare: The Crimean Operation, A Case Study," *Centre for Eastern Studies* 42 (May 2014): 7, accessed 10 June 2022 https://www.osw.waw.pl/sites/default/files/the_anatomy_of_russian_information_warfare.pdf.

6. Stephen Blank, "Russian Information Warfare as Domestic Counterinsurgency," *American Foreign Policy Interests* 35, no.1 (2013): 42, https://doi.org/10.1080/10803920.2013.757946.

7. Kieran Devine, "Ukraine War: Thousands of Ordinary Russians Are Going to Battle in the Information War—What They're Saying," Sky News, 17 April 2022, accessed 10 June 2022, https://news.sky.com/story/ukraine-war-how-ordinary-russians-are-taking-part-in-the-information-battle-12589587.

8. Peter Mattsson, "Russian Military Thinking–A New Generation of Warfare," *Journal on Baltic Security* 1, no. 1 (2015): 66–67, accessed 10 June 2022, https://www.baltdefcol.org/files/files/JOBS/JOBS.01.1.pdf.

9. Fergus Hanson et al., *Hacking Democracies: Cataloguing Cyber-Enabled Attacks on Elections, Policy Brief*, Report No. 16/2019 (Barton, AU: International Cyber Policy Centre, Australian Strategic Policy Institute, 15 May 2019), 9, accessed 10 June 2022, https://www.aspi.org.au/report/hacking-democracies.

10. Thomas Paterson and Lauren Hanley, "Political Warfare in the Digital Age: Cyber Subversion, Information Operations and 'Deep Fakes,'" *Australian Journal of International Affairs* 74, no. 4 (10 March 2020): 442, https://doi.org/10.1080/10357718.2020.1734772.

11. Martin C. Libicki, "The Convergence of Information Warfare," *Strategic Studies Quarterly* 11, no. 1 (Spring 2017): 60, accessed 10 June 2022, https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-11_Issue-1/Libicki.pdf.

12. Daivis Petraitis, Vira Ratsiborynska, and Valeriy Akimenko, *Russia's Strategic Exercises: Messages and Implications* (Riga, LV: NATO Strategic Communications Centre of Excellence, July 2020), 9–10, accessed 10 June 2022, https://stratcomcoe.org/publications/russias-strategic-exercises-messages-and-implications/30.

13. Gordan Akrap and Viacheslav Semenienko, "Hybrid Warfare Case Studies—Croatia and Ukraine," *National Security and the Future* 21, no. 1-2 (2020): 17, 19, 22, accessed 10 June 2022, https://www.nsf-journal.hr/online-issues/focus/id/1295#.YqNkWihOlEY.

14. *Deception Maxims: Fact and Folklore* (Washington, DC: Office of Research and Development, Central Intelligence Agency, 1980), 5, accessed 10 June 2022, https://www.governmentattic.org/18docs/CIAdeceptionMaximsFactFolklore_1980.pdf.

15. Peter Pomerantsev, "The Kremlin's Information War," *Journal of Democracy* 26, no. 4 (October 2015): 42–43, accessed 10 June 2022, https://www.journalofdemocracy.org/articles/authoritarianism-goes-global-ii-the-kremlins-information-war/.

16. Ibid., 46.

17. Mateusz Kamionka, "Patriotism of the Young Generation in Ukraine in the Era of Hybrid War," *Lithuanian Annual Strategic Review* 18 (September 2020): 227, https://doi.org/10.47459/lasr.2020.18.10.

18. Michael Kofman et al., *Lessons from Russia's Operations in Crimea and Eastern Ukraine* (Santa Monica, CA: RAND Corporation, 2017), 80, accessed 10 June 2022, https://www.rand.org/pubs/research_reports/RR1498.html.

19. Joint Publication (JP) 5-0, *Joint Planning* (Washington, DC: U.S. Government Publishing Office, 1 December 2020), accessed 10 June 2022, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp5_0.pdf. Center of gravity (DOD)— "The source of power that provides moral or physical strength, freedom of action, or will to act. Also called COG."

20. Mirosław Banasik, "Russia's Hybrid War in Theory and Practice," *Journal on Baltic Security* 2, no. 1 (2016): 163–64, accessed 10 June 2022, https://www.baltdefcol.org/files/files/JOBS/JOBS.02.1.pdf.

21. P. N. Chatterje-Doody, "Harnessing History: Narratives, Identity and Perceptions of Russia's Post-Soviet Role," *Politics* 34, no. 2 (2013): 129, 131, 134, https://doi.org/10.1111%2F1467-9256.12026.

22. "As Putin Hints at War in Ukraine, State TV Amplifies the Threat," Radio Free Europe/Radio Liberty, 22 December 2021, accessed 10 June 2022, https://www.rferl.org/a/russia-ukraine-state-tv-fears/31621638.html.

23. Ross Babbage, *Winning Without Fighting: Chinese and Russian Political Warfare Campaigns and How the West Can Prevail*, vol. I (Washington, DC: Center for Strategic and Budgetary Assessments, 2019), 23, accessed 10 June 2022, https://csbaonline.org/research/publications/winning-without-fighting-chinese-and-russian-political-warfare-campaigns-and-how-the-west-can-prevail.

24. Oksana Frolova and Khrystyna Kataryna, "The Russian Orthodox Church as an Instrument of Hybrid War against Ukraine," *Romanian Review of Political Sciences and International Relations* 18, no. 2 (2021): 160, 165, accessed 10 June 2022, https://web.p.ebscohost.com/ehost/detail/detail?vid=0&sid=8c9e3c9d-37eb-43f1-a597-009aabd7e19c%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=151388633&db=poh.

25. Alexis Mrachek and Shane McCrum, "How Putin Uses Russian Orthodoxy to Grow His Empire," The Heritage Foundation, 22 February 2019, accessed 10 June 2022, https://www.heritage.org/europe/commentary/how-putin-uses-russian-orthodoxy-grow-his-empire.

26. Laurence Peter, "Orthodox Church Split: Five Reasons Why It Matters," BBC News, 17 October 2018, accessed 10 June 2022, https://www.bbc.com/news/world-europe-45877584.

27. Petraitis, Ratsiborynska, and Akimenko, *Russia's Strategic Exercises*, 17.

28. For in-depth discussions of anti-Soviet resistance, refer to Dalia Kuodytė and Rokas Tracevskis, *The Unknown War: Armed Anti-Soviet Resistance in Lithuania in 1944-1953* (Vilnius, LT: Genocide and Resistance Research Centre of Lithuania, 2006); Yuri Zhukov, "Examining the Authoritarian Model of Counter-Insurgency: The Soviet Campaign Against the Ukrainian Insurgent Army," *Small Wars and Insurgencies* 18, no. 3 (September 2007): 439–66, https://doi.org/10.1080/09592310701674416.

29. Ivo Juurvee et al., *Falsification of History as a Tool of Influence* (Riga, LV: NATO Strategic Communications Centre of Excellence, December 2020), 19, 22, 40, accessed 10 June 2022, https://stratcomcoe.org/publications/falsification-of-history-as-a-tool-of-influence/16.

30. Petraitis, Ratsiborynska, and Akimenko, *Russia's Strategic Exercises*, 36, 42.

31. *We Will Not Allow Anyone to Annex this Victory, We Will Not Allow it to be Appropriated–Zelenskyy*, YouTube video, posted by "UATV English," 9 May 2022, accessed 10 June 2022, https://www.youtube.com/watch?v=u6Dxb2C2HZE.

32. Christopher Paul and Miriam Matthews, *The Russian "Firehose of Falsehood" Propaganda Model: Why It Might Work and Options to Counter It* (Santa Monica, CA: RAND Corporation, 2016), accessed 10 June 2022, https://www.rand.org/pubs/perspectives/PE198.html.

33. Lincoln Flake, "Russia and Information Warfare: A Whole-of-Society Approach," *Lithuanian Annual Strategic Review* 18, no. 1 (2020): 167, https://doi.org/10.47459/lasr.2020.18.7.

34. Volha Damarand, "Building Governmental Resilience to Information Threats: The Case of Ukraine," *The Polish Quarterly of International Affairs* 26, no. 3 (2017): 69, accessed 10 June 2022, https://www.proquest.com/openview/73f71acecb07d56043e36a36fe890b3f/1?cbl=506345&pq-origsite=gscholar&parentSessionId=UJmyccNWc120HS%2B%2FMM9FKec%2BKt0aE1VVe6qxvtItqKw%3D

35. Benjamin Jensen, "The Cyber Character of Political Warfare," *The Brown Journal of World Affairs* 24, no. 1 (Fall/Winter 2017): 161, accessed 10 June 2022, https://bjwa.brown.edu/24-1/benjamin-jensen-the-cyber-character-of-political-warfare/.

36. Kofman et al., *Lessons from Russia's Operations in Crimea and Eastern Ukraine*, 12.

37. Pyung-Kyun Woo, "The Russian Hybrid War in the Ukraine Crisis: Some Characteristics and Implications," *The Korean Journal of Defense Analysis* 27, no. 3 (September 2015): 387, http://doi.org/10.22883/kjda.2015.27.3.007.

38. "Prigozhin Propaganda? Another Movie Bathes Russian Mercenaries in a Positive Light, This Time in Eastern Ukraine," Radio Free Europe/Radio Liberty, 15 August 2021, accessed 10 June 2022, https://www.rferl.org/a/31411794.html.

39. Ibid.

40. Mike Eckel, "Polls Show Russians Support Putin and the War on Ukraine. Really?," Radio Free Europe/Radio Liberty, 7 April 2022, accessed 10 June 2022, https://www.rferl.org/a/russia-support-ukraine-war-polls-putin/31791423.html.

41. Philipp Chapkovski and Max Schaub, "Do Russians Tell the Truth When They Say They Support the War in Ukraine? Evidence from a List Experiment," *EUROPP* (blog), The London School of Economics and Political Science, 6 April 2022, accessed 10 June 2022, https://blogs.lse.ac.uk/europpblog/2022/04/06/do-russians-tell-the-truth-when-they-say-they-support-the-war-in-ukraine-evidence-from-a-list-experiment/.

42. Aiden Hoyle et al., "Grey Matters: Advancing a Psychological Effects-Based Approach to Countering Malign Information Influence," *New Perspectives* 29, no. 2 (2021): 149, https://doi.org/10.1177%2F2336825X21995702.

Demonstrators march with a banner that reads "Ukraine—Peace, Russia—Freedom," in Moscow on 24 February 2022 after Russia's attack on Ukraine. Many large antiwar protests were organized in the immediate aftermath of Russia's invasion, but the Russian government has subsequently stymied large-scale street protests and closed down the opposition's access to Russian media. (Photo by Dmitry Serebryakov, Associated Press)

Russian Public Opinion and the Ukraine War

Applying the American Experience

John Mueller, PhD

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Since World War II, the United States has conducted extended wars in Korea, Vietnam, Afghanistan, and Iraq. Whether the Russian effort in Ukraine will be similarly extended has yet to be seen. However, should that come about, evidence about public opinion from America's wars suggests lessons—and nonlessons—for assessing Russian opinion on the war in Ukraine.

Abstract

People tend to believe what they want to believe. Initially, publics often overwhelmingly want to believe that the actions of their governments—whatever the actual motivation—were justified, wise, and necessary. However, even if antiwar officials get into office, this may not change the prosecution of the war very much due to the momentum such military adventures tend to acquire by their nature. On the other hand, even successful prosecution of a war is unlikely to convert people who have already decided it was not worth the costs. Therefore, the eventual decline of public support may not cause an abrupt exit, but it may result in a long-term strong inclination within the Russian government not to attempt other such ventures. Consequently, the Ukraine invasion may well prove to be a "one-off" anomaly rather than a harbinger of other such attacks to follow. In fact, the Ukraine war may soon be recognized as an anachronism unlikely to affect the global trend toward a decline of international war as a means of settling international disputes, one of the greatest sociocultural achievements in modern history. For example, a large part of the Russian public seems to have accepted as past history the Soviet debacle in Afghanistan in the late 1980s and might accept as necessary a similarly humiliating withdrawal from Ukraine as an acceptable cost for achieving peace, a return to domestic normalcy, and readmittance to the international community. Consequently, the key issue is whether the senior Russian civilian and military leadership—who often seem fixated on rectifying perceived humiliations of the past—would be willing to accept such an outcome irrespective of what the majority of the Russian populace actually desires.

Russian President Vladimir Putin walks with Gen. Valery Gerasimov, chief of the General Staff of the Russian military (*left*) and Russian Defense Minister Sergei Shoigu on 13 September 2021 at the Mulino training ground in Nizhny Novgorod, Russia, during the Zapad 2021 joint military drills held by Russia and Belarus. (Photo by Sergei Savostyanov/Kremlin Pool/Alamy Live News)

The comparison suggests that, after a rally-around-the-flag effect at the outset of the war, a decline of support is to be expected regardless of the effects of media coverage, antiwar demonstrations, censorship and propaganda efforts, or the military course of the war. This decline may not cause an abrupt exit from the war, but it may well result in an increasing willingness to accept failure or even debacle in the war and in a strong inclination not to attempt other such ventures. However, there is an important difference in the experiences, one that is potentially consequential: while the average American remained substantially untouched personally by the wars, that may not hold for the average Russian.

Initial Support

Even discounting for the restrictions in civil liberties, initial Russian popular support for the war appears to have been quite high—probably around 70 or 75 percent. The same number roughly holds for the American wars except for the one in Afghanistan, conducted shortly after the 9/11 terrorist attacks, where support at the outset was more like 90 percent.[1]

People tend to believe what they want to believe. In all cases, the strong initial support for the wars was likely the result of a rally-around-the-flag effect in which the publics overwhelmingly wanted to believe

Against a background of waving flags, Russian President Vladimir Putin attends a concert on 18 March 2022 at Luzhniki Stadium in Moscow to commemorate the eighth anniversary of Russia's annexation of Crimea from Ukraine. The ceremony was intended in part to bolster public support for Putin's February 2022 invasion, the purpose of which was to annex portions of Ukraine to Russia. Although Putin has attempted to promote public support for his "special military operation" against Ukraine through extensive state propaganda, a controlled media, and oppression measures against war opponents, historical experience suggests that a decline of popular support is inevitable regardless of the effects of media coverage, antiwar demonstrations, censorship, and propaganda efforts due to the military course of the war itself. No amount of censorship and biased reporting can suppress the two most important elements in the public's decision calculus: the war is still going on and our people are dying in it. (Photo by Ramil Sitdikov, Agence France-Presse)

that the actions of their governments were justified, wise, and necessary.

The strong initial support for the Ukraine invasion among the Russian public has routinely been attributed to the propaganda efforts of the Russian government and its controlled media. But those same forces have for years sought to convince Russians of the value of the Russian anti-COVID vaccine, Sputnik. Yet resistance to that message has been extensive.[2] And if extensive and purposeful promotion could guarantee acceptance, we'd all be driving Edsels and drinking New Coke—legendary marketing failures in 1958 and 1985, respectively, by two of the (otherwise) most successful businesses in history: the Ford Motor Company and Coca-Cola.[3]

The acceptance of misinformation in such matters is hardly unusual. At the outset of the war in Iraq, most Americans, nudged on by the Republican administration, said they believed that Saddam Hussein was "personally involved" in the 9/11 attacks. And, although the nudging stopped, 30 to 40 percent held to that belief for more than seven years. Moreover, the public substantially bought the ideas that a loss in Afghanistan would lead to more 9/11s, that al-Qaida presented a threat to the United States that was existential and had infiltrated thousands of trained operatives into the country, that wars in Vietnam and Korea were necessary to prevent World War III, and that Saddam Hussein would come to "dominate" the Middle East with his remarkably inept army and/or hand off weapons of mass destruction to congenial terrorists. Plausible counters to such assertions mostly generated little headway.

The Decline of Support

The U.S. data suggest that Russian support for the war in Ukraine will decline—rather sharply in the first stages as reluctant supporters drop off and then more slowly as the remainder comes increasingly to consist of harder core supporters. And the most important element in this decline is the cumulation of casualties—and particularly of combat deaths—among their forces.

It should not be assumed, however, that poll respondents have much of a grasp on what the actual number of casualties or battle deaths is—and their guesses on the issue do not correlate very well with support or opposition to the war. Rather, people seem to make a rough cost-benefit calculation in which the value of the war as they see it is put up against the cost thus far in American lives.

In all of this, what has chiefly mattered for American public opinion is American losses, not those of the people defended. Although the number of Iraqis who have died because of the U.S. invasion of their country has reached into the hundreds of thousands, the only cumulative body count that truly matters for American public opinion, and the only one that is routinely reported, is the American one.

There is nothing new about this phenomenon: Americans backed the wars in Korea and Vietnam because they saw them as vital to confronting the threat presented by international communism, and defending the South Koreans or the South Vietnamese was decidedly a secondary goal.[4] And although fully 60 percent of the American public held the Iraqi people to be *innocent* of *any* blame for their leader's policies in the Gulf War of 1991, this lack of animosity toward the Iraqi people did not translate into a great deal of sympathy among the American public for Iraqi casualties. Extensive pictures and publicity about the civilian casualties resulting from an attack on a Baghdad bomb shelter on 13 February 1991 had no impact on support for bombing. Moreover, images of the "highway of death" and reports that one hundred thousand Iraqi combatants had died in the war scarcely dampened enthusiasm at the various "victory" and "welcome home" parades and celebrations.[5] Nor was much sympathy or even interest shown for the Iraqi civilian deaths that resulted from the severe sanctions imposed on Iraq by the United States during the 1990s.[6]

Due to the historic closeness of Russians and Ukrainians ("our brothers"), this effect may be different in the current war.

Weighing the Stakes

The public did not weigh the stakes the same for every war. When support for the wars in Vietnam and Korea dropped below 50 percent, some nineteen thousand battle deaths had been suffered by the United States. In the war in Iraq, that level of support, using the same measure, was reached when around 1,500 had been killed. This lower tolerance for casualties is likely largely due to the fact that the American public placed far less value on the stakes in Iraq than it did on those in Korea and Vietnam which were seen to be vital elements in the Cold War. How such a calculation will play out for Russians today has yet to be determined.

The Impact of Events in the War

Specific events in the war seem for the most part to have had little long-term impact on the downward trend. Thus, a drop-in support in 2004 after the disclosure of prisoner abuses in Iraq by American soldiers at the Abu Ghraib prison was mostly reversed in a month or so. And the same thing happened when there was a notable upward shift in support after Saddam Hussein was captured at the end of 2003: support soon fell back to where it had been before and then continued its generally downward course.[7] Support for the Vietnam War was already in decline at the time of the Tet Offensive in 1968, and it is not at all clear the that dramatic event accelerated the pace of the decline much.[8]

More generally, as the Saddam Hussein capture suggests, if people have decided the war is not worth it, improvements on the battlefield will not increase support for the war. There was such a perceived improvement at the time of the surge in Iraq between 2007 and 2008 when, for example, the percentage of people holding that the United States was making significant progress rose from 36 to 46, while the percentage concluding that it was winning the war rose from 21 to 37. Despite this, however, support for the war itself did not increase—there was no change in questions asking if the respondents favored the war, felt it had been worth the effort or the right decision or a mistake, or favored staying as long as it takes.[9] Successful prosecution of a war, it appears, is unlikely to convert people who have already decided it was not worth the costs.

The Impact of the Media and Antiwar Demonstrations

If the decline in support is primarily caused by increasing casualties as suffered by the invading forces, media and propaganda efforts and public antiwar demonstrations will be less significant. This effect likely holds for the Ukraine war as well.

No amount of censorship and biased reporting can suppress the two most

John Mueller is a political scientist at Ohio State University and a Senior Fellow at the Cato Institute. He holds an MA and PhD from the University of California, Los Angeles. He is the author of numerous books, monographs, articles, papers, and editorials on political-science-related topics.

important elements in the public's decision calculus: the war is still going on and our people are dying in it. And that noisy public antiwar demonstrations often fail to convince and may be counterproductive is suggested by a comparison of the Korea and Vietnam Wars—costly anti-communist wars on the fringes of Asia. Although there were few, if any, antiwar demonstrations during the war in Korea, support for that war eroded as it did during the Vietnam War in which antiwar protest was frequent and highly visible.[10] The antics of Vietnam antiwar protesters were often met with dismay by the public. For example, after the riots in Chicago at the time of the Democratic convention in 1968, polls found that people were overwhelmingly supportive of the police, not the protesters.[11]

Leonid Volkov, chief of staff for jailed Russian opposition leader Alexey Navalny (*background photo*), speaks during an interview at the European Parliament 14 December 2021 in Strasbourg, France. "Russian critics of President Vladimir Putin are waging a vigorous campaign of resistance to the war in Ukraine, according to … Volkov. Navalny's supporters are actively fighting to resist Putin on the information front 'where we fight to change the attitude of the Russian society.'" (Photo by Frederick Florin, Agence France-Press)

Even if an antiwar movement is successful in getting like-minded officials into office, this may not change the prosecution of the war very much. Refusing to repeat the mistakes of their counterparts in the Vietnam War, opponents of the Iraq War, rather than expressing themselves in often unruly public demonstrations, worked assiduously within the Democratic party. As such, they were instrumental in engineering the party's 2004 nomination for the presidency of the most credible antiwar candidate, John Kerry. Then, in the 2006 and 2008 elections, they fielded successful antiwar candidates for House and Senate, many of them Iraq War veterans, substantially increasing in each case the number of Democratic seats. And above all, they were the cornerstone of the success in 2008 of the only major presidential candidates in the field to have opposed the Iraq War, Barack Obama. But Obama proved to be quite a disappointment: he appointed to notable office no one who had publicly and clearly opposed the Iraq war before it was launched. Obama left that war more or less on George W. Bush's timetable, and then he handed the war in Afghanistan over to his successor eight years later.

The Consequences of the Decline of Support

Although declining public support for the war may not generally lead to abandonment of the war, it may still have consequences. For example, the decline helped impel changes in military tactics to reduce the rate of American casualties in all four of the wars, although this seems to have had little effect on support for the war despite predictions that decreasing casualty rates would generate an increase of support.[12]

A second effect can be the creation of a politically permissive atmosphere for withdrawal and even for debacle. This can be seen in the public acquiescence in the abrupt and embarrassing collapse in Afghanistan

in 2021. The public generally accepted the disaster and was not interested in sending troops to attempt to rectify it. The collapse itself seems to have had little lasting effect on President Joseph Biden's political standing. The same phenomenon was seen in the acceptance of utter collapse of the U.S. position in Vietnam in 1975, which led to a communist takeover there. In fact, the man who presided over that debacle, President Gerald Ford, tried to use the fiasco to his advantage in his reelection campaign the next year, arguing that "we are at peace. Not a single young American is fighting or dying on any foreign soil tonight."[13] Although there are no poll data, the Russian public seems to have accepted the Soviet debacle in Afghanistan under Mikhail Gorbachev in the late 1980s, and in all, the experience suggests that in time they would accept even a humiliating withdrawal from Ukraine in much the same way.

Third, the Ukraine war is unlikely to affect the decline of international war, one of the greatest achievements in modern history.[14]

Until Russia's invasion of Ukraine, Europe had lived free from substantial international war for the longest period since the word "Europe" was invented some 2,500 years ago. For the most part, the rest of the world has followed suit, and the use of war to settle international differences has almost completely vanished—although measures short of direct warfare continue to be employed including interventions in civil wars, applying economic sanctions, attempting covert regime change, poaching fish, and waging armed border disputes in remote areas.

Some are concerned that the Ukraine war might shatter this remarkable development.[15] But it is far more likely that the aversion to such wars will continue, something strongly suggested by the facts that the war has almost universally been condemned and that other countries are unlikely to be inspired by the costly and messy example no matter how the war comes out.

America's wars mostly generated a strong public reluctance to repeating the experience. There were no repeats of the Korea or Vietnam Wars, and the country seems to have embraced a kind of Iraq/Afghanistan syndrome after its massive overreactions to 9/11.[16] This phenomenon suggests that the Russian venture into Ukraine may well prove to be a one-off rather than a harbinger of other such attacks. As in the United States, the primary response will likely be "let's not do that again."

"Russians may well come to face severe economic pain and perhaps even collapse because of their invasion of Ukraine."

A Potentially Important Difference: Direct Pain to the Public

Beyond those who fought the American wars and those close to them, the public never really had to pay a punishing price or tax for their wars. In contrast, Russians may well come to face severe economic pain and perhaps even collapse because of their invasion of Ukraine.

The chief architect of the war, President Vladimir Putin, argues that Russia will be able to suck up any economic hit. However, things were not looking that good for the Russian economy even before the war. A lengthy period of growth during this century was halted in 2014 and growth has been stagnant ever since. Some of this was caused by the reaction to Putin's annexation of portions of Ukraine in 2014 which set off something like an economic doomsday machine. Because of its antics, Russia suffered a decline in the value of its currency, capital flight, a drop in its stock market, and a decline in foreign investment. And, perhaps most importantly, there was a very substantial drop in confidence by investors, buyers, and sellers throughout the world.[17] This alienated, in particular, the European Union, which had long been Russia's largest trading partner and direct investor.[18] In addition, economic sanctions were visited on Russia by other states, and unrelated to the crisis, there was a severe drop in prices for oil on the international market, a development that was especially harmful to

Russia: oil and gas sales fund about 36 percent of its annual budget. As a result, real disposable income fell by 15 percent between 2014 and 2017.[19] Moreover, aspirational purchases for homes and cars shifted to ones devoted to daily needs.[20]

Because of this, economists, even before the Ukraine crisis, were suggesting that Russia's prospect for growth over the next decade was "dim."[21] The current war there is likely to considerably exacerbate this situation, particularly if oil and natural gas prices descend from their current highs.[22] European customers have greatly increased their efforts to wean themselves from dependence on Russian oil and natural gas, and there has been a determined effort to apply punishing economic sanctions. Moreover, a great number of foreign, and particularly Western, firms have abruptly withdrawn from the Russian economy, and as a simple matter of business, few are likely to return any time soon, particularly if Putin remains in office. This could be particularly costly because, as Obama pointed out derisively, if undiplomatically, in his final news conference as president in 2016, "Their economy doesn't produce anything that anybody wants to buy, except oil and gas and arms. They don't innovate."[23]

Although nothing like this happened in any of the four American wars, the economic damage for Russia's war is likely to be felt directly by the Russian people as currency becomes insecure, travel is restricted, jobs are lost, incomes fall, opportunities are snuffed out, shortages erupt, the quality of life plunges, corruption becomes ever worse, businesses fail, government coffers become empty, and talent is hemorrhaged. Russia may be able to ride out the shock, but there is a special potential for disaster as well. ■

Notes

1. John Mueller and Mark G. Stewart, "Trends in Public Opinion on Terrorism," 14 May 2020, 8, 19–21, accessed 10 June 2022, https://politicalscience.osu.edu/faculty/jmueller/terrorpolls.pdf. The poll question used to measure war support is of this form: "Do you think the United States made a mistake sending troops to fight in xxx?" This works less well for the war in Afghanistan than for the others because there were effectively two wars in Afghanistan: the one in 2001 that quickly succeeded, and the one against the Taliban insurgency that began a few years later and ground on for nearly two decades. Some, or even many, respondents may choose to take the question to refer to the first war, not to the second or to a combination of the two.

2. Sarah Rainsford, "Why Many in Russia Are Reluctant to Have Sputnik Vaccine," BBC News, 3 March 2021, accessed 10 June 2022, https://www.bbc.com/news/world-europe-56250456.

3. On this consideration more generally, see John Mueller, *Public Opinion on War and Terror: Manipulated or Manipulating?* (Washington, DC: Cato Institute, 10 August 2021), accessed 10 June 2022, https://www.cato.org/white-paper/public-opinion-war-terror.

4. John Mueller, *War, Presidents and Public Opinion* (Lanham, MD: University Press of America, 1973), 48–49. More generally, see John Mueller, "Public Opinion as a Constraint on U.S. Foreign Policy: Assessing the Perceived Value of American and Foreign Lives" (paper presentation, Annual Convention of the International Studies Association, Los Angeles, CA, 15 March 2000), accessed 13 June 2022, https://politicalscience.osu.edu/faculty/jmueller/ISA2000.pdf.

5. John Mueller, *Policy and Opinion in the Gulf War* (Chicago: University of Chicago Press, 1994), 122, 134–35, 316, 317. That this estimate of Iraqi battle deaths was much too high, see John Mueller, "The Perfect Enemy: Assessing the Gulf War," *Security Studies* 5, no. 1 (Autumn 1995): 77–117, https://doi.org/10.1080/09636419508429253.

6. See John Mueller and Karl Mueller, "The Methodology of Mass Destruction: Assessing Threats in the New World Order," *Journal of Strategic Studies* 23 (March 2000): 163–87, https://doi.org/10.1080/01402390008437782.

7. John Mueller, ed., "The Iraq War and the Management of American Public Opinion," in *War and Ideas: Selected Essays* (London: Routledge, 2011), 199, 203, 205.

8. Mueller, *War, Presidents and Public Opinion*, 57.

9. Mueller and Stewart, "Trends in Public Opinion on Terrorism," 21; Mueller, "The Iraq War," 214. For the argument, in contrast, that the American public is "defeat phobic" rather than "casualty phobic," see Christopher Gelpi, Peter D. Feaver, and Jason Reifler, *Paying the Human Costs of War: American Public Opinion and Casualties in Military Conflicts* (Princeton, NJ: Princeton University Press, 2009).

10. Mueller, *War, Presidents and Public Opinion*, 62, 156; John Mueller, "Reflections on the Vietnam Protest Movement and on the Curious Calm at the War's End," in *Vietnam as History*, ed. Peter Braestrup (Lanham, MD: University Press of America, 1984), 151–57, accessed 10 June 2022, https://politicalscience.osu.edu/faculty/jmueller/BRAESTRU.pdf.

11. Mueller, *War, Presidents and Public Opinion*, 164–65. For the argument that the protest movement likely helped Richard Nixon in both the 1968 and the 1972 elections, see Mueller, "Reflections on the Vietnam Protest Movement."

12. Scott Sigmund Gartner, "The Multiple Effects of Casualties on Public Support for War: An Experimental Approach," *American Political Science Review* 102, no. 1 (February 2008): 95–106, https://doi.org/10.1017/S0003055408080027.

13. Mueller, "Reflections on the Vietnam Protest Movement."

14. For discussions of the phenomenon, see Yuval Noah Harari, "Yuval Noah Harari Argues That What's at Stake in Ukraine Is the Direction of Human History," *The Economist* (website), 9 February 2022, accessed 10 June 2022, https://www.economist.com/by-invitation/2022/02/09/yuval-noah-harari-argues-that-whats-at-stake-in-ukraine-is-the-direction-of-human-history; John Mueller, *The Stupidity of War: American Foreign Policy and the Case for*

Complacency (New York: Cambridge University Press, 2021); Steven Pinker, *The Better Angels of Our Nature: Why Violence Has Declined* (New York: Viking, 2011); John Mueller, "War Is on the Rocks," War on the Rocks, 1 July 2021, accessed 10 June 2022, https://warontherocks.com/2021/07/war-is-on-the-rocks/.

15. Harari, "Yuval Noah Harari Argues That What's at Stake in Ukraine Is the Direction of Human History."

16. John Mueller and Mark G. Stewart, "America the Humble: The End of Post-9/11 Militarism," Cato Institute, 30 September 2021, accessed 10 June 2022, https://www.cato.org/commentary/america-humble-end-post-9/11-militarism.

17. Daniel Treisman, "Why Putin Took Crimea: The Gambler in the Kremlin," *Foreign Affairs* 95, no. 3 (May/June 2016), accessed 10 June 2022, https://www.foreignaffairs.com/articles/ukraine/2016-04-18/why-russian-president-putin-took-crimea-from-ukraine.

18. Samuel Charap and Timothy J. Colton, *Everyone Loses: The Ukraine Crisis and the Ruinous Contest for Post-Soviet Eurasia* (London: Routledge, 2017), 161.

19. Anders Åslund, *Russia's Crony Capitalism: The Path from Market Economy to Kleptocracy* (New Haven, CT: Yale University Press, 2019), 242.

20. Samuel A. Greene, "From Boom to Bust: Hardship, Mobilization and Russia's Social Contract," *Daedalus* 146, no. 2 (Spring 2017): 115, https://doi.org/10.1162/DAED_a_00439.

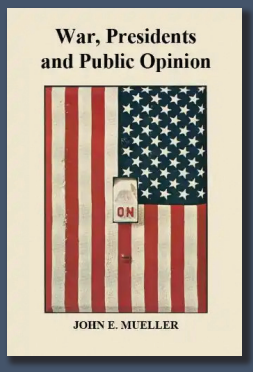
21. Timothy Frye, *Weak Strongman: The Limits of Power in Putin's Russia* (Princeton, NJ: Princeton University Press, 2021), 90.

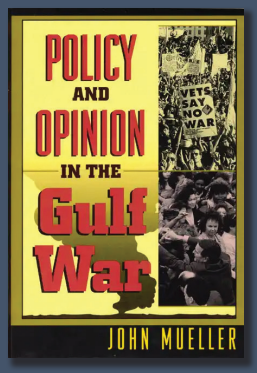
22. Patricia Cohen and Valeriya Saronova, "In Russia, as Prices Soar, the Outlook for Its Economy Grows 'Especially Gloomy,'" *New York Times* (website), 19 May 2022, accessed 10 June 2022, https://www.nytimes.com/2022/05/19/business/economy/russia-economy.html.

23. Office of the Press Secretary, "Press Conference by the President," The White House, 16 December 2016, accessed 13 June 2022, https://obamawhitehouse.archives.gov/the-press-office/2016/12/16/press-conference-president; see also Åslund, *Russia's Crony Capitalism*.

Military Review
WE RECOMMEND

Originally published in 1973, this volume by Dr. John E. Mueller is considered by many scholars in the field of both communications and political science to be the pivotal study of public opinion as it relates to warfare that established a benchmark against which all other such studies are now judged. The work itself provides a rigorous analysis of public opinion as it evolved with regard to the war in Korea during the 1950s and the war in Vietnam during the 1960s and 1970s. A key element of the study deals with how the U.S. presidents who led during those conflicts were affected by public opinion in their decisions. The study also examines how public opinion polling was often misrepresented for political traction in an effort to advance political agendas relative to the wars. Every serious military scholar examining the relationship of journalism, public affairs, psychological operations, propaganda, political warfare and any other dimension of communications related to warfare should be familiar with the key principles identified and analysis the book provides to understand why and how public opinion affects the leadership's conduct of war.





Using largely the same analytical tools developed for his previous work—except in much greater detail—Mueller analyzes the influence of public opinion on the conduct of the 1990–1991 Gulf War. To the advantage of scholars studying the influence of public opinion on that conflict, it may have been the most extensively polled war in U.S. history as President George W. Bush, his opponents, and even Iraqi President Saddam Hussein appealed to, and tried to influence, public opinion. Mueller provides an account of the complex relationship between American policy and public opinion during the Gulf crisis. In doing so, he analyzes key issues including the actual shallowness of public support for war; the effect of public opinion on the media (rather than the other way around); the use and misuse of polls by policy makers; the American popular focus on Hussein's ouster as a central purpose of the war; and the war's short-lived impact on voting.

The Role of Expeditionary Dentistry in Large-Scale Combat Operations

Lt. Col. Andres Mendoza, DDS, U.S. Army
Maj. Ross Cook, DMD, U.S. Army

Large-scale combat operations (LSCO) will strain patient evacuation and medical logistics in the future.[1] Contested airspace and theater access will limit aeromedical evacuation that was routinely employed during counterinsurgency operations. Historically, during Operation Iraqi Freedom (OIF), soldiers could return to their units within three days if they were evacuated to a dentist for treatment.[2] Alternately, if there was no dental support within the area of operations, then it took up to ten days for a soldier to return to duty.[3] This presents a critical workforce shortage in the case of a low-density military occupation specialty such as operating room technician. Loss of even one soldier can severely reduce the combat effectiveness of a small fire team such as a mortar crew or machine-gun team. Since dental services will be limited during the early phases of an operation, ten days is a more realistic projection for a soldier's period of unavailability.

Dental disease nonbattle injuries (DNBI) are defined as any dental emergency requiring treatment by a dental officer in theater. These emergencies include but are not limited to oral infections or abscesses, fractured facial bones, fractured teeth, and severe dental caries. If the rates of dental DNBI during LSCO are comparable to counterinsurgency operations in Iraq and Afghanistan, then the implications are costly. John Simecek et al. predicted that dental DNBI can be as high as 183 per 1,000 soldiers, or 18 percent.[4] Clinton Murray et al. tracked the variety of patients treated at a Role 2 medical facility and observed that 19 percent were dental patients.[5] We must also consider the dental readiness of Army National Guard and Army Reserve soldiers since these components may be activated in LSCO. During Operation Enduring Freedom (OEF), the Army Reserve and Army National Guard had a 51 percent and 73 percent greater risk of a dental emergency, respectively.[6]

We can extrapolate these overall figures to align with the new concept of the division as the unit of action.[7] This robust division is projected to have a population of twenty thousand fighting soldiers and fifteen thousand supporting soldiers. In a division of thirty-five thousand soldiers, if 19 percent of the population requires dental services, then we can anticipate approximately 6,650 dental patients. The division as a unit of action requires updating the basis of allocation of dental services from the BCT-centric model, which only authorized one dental team within the brigade support battalion.

Recommendations

Dental emergencies introduce risk to units in a theater of operations. Commanders and medical

Capt. Earle Yeamans, 1st Infantry Division dentist, and his assistant, Spec. 5 Richard Ackley (*wearing glasses, on left*) treat a 1st Infantry Division infantryman on a defensive perimeter 21 October 1968 at Di An base, Vietnam, while others wait their turn for checkups, fillings, drillings, and extractions. Three times a month, Yeamans and Ackley hoisted their six hundred-pound portable dentist's office aboard a helicopter and traveled to field locations where they stayed for three or four days, examining every man in the unit and scheduling appointments. (Photo by Bob Cutts, courtesy of *Stars and Stripes*)

planners should consider that dental emergencies can degrade combat effectiveness based on the volume of casualties and the period of unavailability during treatment. In preparation for LSCO, dental services require updated training programs and refocused leadership. Dental officers should be prepared with an emphasis in hands-on training and casualty response. Special operations forces (SOF) support provides a model for dental utilization in austere environments, with an emphasis on mobility and emergency medical training. To align with the division as the unit of action, dental services will require leadership at the division surgeon level. A division dental surgeon can integrate dental support within a theater of operations and develop procedures for mass casualty (MASCAL) events. Lastly, a consultant for expeditionary dentistry to the Office of the Surgeon General can lead at the strategic level to guide efforts toward equipment modernization and curriculum development.

Hands-on training. The general dentist (63A) and comprehensive dentist (63B) serve in operational billets within U.S. Army Forces Command (FORSCOM) and SOF. In previous years, these dental officers were able to attend the Brigade Dental Surgeon Course (BDSC) at Camp Bullis, Texas. This five-day course, discontinued in 2015, trained dentists to use expeditionary dental equipment in austere conditions and prepare for casualty response scenarios. The need to develop and prepare junior dental officers is critical, since 41 percent of the Army Dental Corps officers have five years or less of experience.[8] These officers have no operational experience from OIF and very little experience

from OEF deployments. The BDSC course provided training in vital aspects of fieldcraft such as equipment sterilization and the conduct of medical civic action programs. It also afforded dental officers with previous OEF and OIF experience an opportunity to mentor course attendees and share lessons learned.

Dentists attached to a BCT may now attend the Brigade Health Provider Course, which provides an overview of brigade-level responsibilities and operations but does not include hands-on training. Hands-on training is critical as we prepare for the realities of prolonged field care. James A. Nicholson, Justin N. Searor, and Andrew D. Lane estimated that dental patients would account for 17 percent of all prolonged field care casualties, preceded by wounded-in-action and orthopedic injuries, respectively.[9] With limited ability to evacuate patients to a treatment facility, patients will begin to accumulate between Role 1 and Role 2. Dental treatment teams must be prepared to perform battlefield circulation down to the point of need. This can mitigate the period of unavailability previously discussed. An expeditionary course with a curriculum focused on field equipment utilization in austere environments and casualty response training will prepare dental officers for battlefield circulation. Indeed, an expeditionary dental course could serve as a template to train all providers prior to an operational assignment.

Special operations forces support as a model for expeditionary dental services. Historically, SOF have deployed dental services across the competition and conflict continuum. During competition, dental officers engage with partner nations to build mutual trust and confidence. These activities nest within humanitarian and civic assistance and building partner-nation military medical capacity under the framework of global health engagement.[10] Since 2001, dental officers assigned to Special Forces groups have also deployed during conflict to support operational detachment alphas in Afghanistan and Iraq. In this context, dental officers would treat indigenous populations during village stability operations and partner-nations across multiple areas of responsibility. Dental support helps build rapport, which SOF can then leverage as these relationships become established.

Dental officers attached to SOF have developed techniques to provide care in austere environments using lightweight field equipment and limited resupply. These best practices are relevant to LSCO and can guide training to improve expeditionary dentistry in support of conventional maneuver units. Dental services within the division area of operations must also be mobile and scalable in order to perform battlefield circulation with a limited footprint. Dental officers in support of SOF attend additional medical training, such as the Tactical Combat Medical Care Course, in preparation for their deployments. Oftentimes, the Special Forces medical sergeant is the best-trained medical provider at remote camps and fire bases. Therefore, it is critical for any provider performing battlefield circulation to be prepared for a medical emergency in these austere environments.

According to Army Techniques Publication 4-02.19, *Dental Services*, dentists are expected to augment medical personnel during MASCAL events.[11] The Canadian forces attribute their high casualty survival rates to the training of all combatants in tactical combat casualty care (TCCC), not only their medics.[12] In a 2011 study, it was also shown that 87 percent of combat casualties died in the pre-hospital setting before patients reached surgical care.[13] The pre-hospital environment, or Role 1 and Role 2, is where 63A and 63B dentists are most frequently utilized. U.S.

Lt. Col. Andres Mendoza, U.S. Army, is an instructor at the Captains Career Course, Medical Center of Excellence, Fort Sam Houston, Texas. He holds a Doctor of Dental Surgery from the University of Texas Health Science Center San Antonio and a master's degree in oral biology from the Uniformed Services University of Health Sciences. He previously served as group dental surgeon, 5th Special Forces Group (Airborne), with deployments to Afghanistan, Jordan, and Turkey.

Maj. Ross Cook, U.S. Army, is a comprehensive dentist at the Dental Health Activity, Fort Bragg, North Carolina. He holds Doctor of Dental Medicine from the University of Kentucky and a master's degree in oral biology from the Uniformed Services University of Health Sciences. He previously served as group dental surgeon, 10th Special Forces Group (Airborne), with deployments to Afghanistan, Tajikistan, Chad, and Niger.

Capt. Tran Quach-Miller, a dentist with 626th Brigade Support Battalion, 3rd Brigade Combat Team, 101st Airborne Division, cleans Sgt. 1st Class Robert Brady's teeth on 22 March 2008 at Camp Striker, Iraq. (Photo by Staff Sgt. Tony M. Lindback, 302nd Mobile Public Affairs Detachment)

Army Rangers attribute their high survival rates to implementation of the Ranger First Responder program, which also trained all personnel in TCCC.[14] Additionally, this program stressed the "repetitive hands-on applications of TCCC lifesaving skills."[15] All providers on the battlefield, regardless of their area of concentration, should be prepared and trained to serve as a first responder. TCCC should be included within the individual critical task lists for dental officers to ensure these perishable skills are properly maintained versus hastily conducted prior to deployment. Doing so would prepare dental officers for MASCAL events they may encounter during battlefield circulation in LSCO and multi-domain operations (MDO).

Division dental surgeon: a leader to integrate dental support. The Dental Corps lost key billets across FORSCOM with the removal of the division dental surgeon position. This position was likely cut as a result of the Army Modernization Plan of 2005, when several positions were reallocated to allow for the addition of more BCTs.[16] In response to the Budget Control Act of 2011, the Army announced in 2013 it would deactivate and reorganize ten BCTs.[17] When these BCTs were deactivated, the dental positions were removed, and dental services have remained unrepresented within each division surgeon cell since 2005. This presents a critical leadership gap. If the division will serve as the decisive maneuver element in LSCO, then the division surgeon's section will require a division dental surgeon to integrate this medical function within the area of operations. A division dental surgeon can improve integration amongst the varied dental services that exist within the division footprint—the brigade support medical company, the dental company area support, and the field hospitals—to restore combat effectiveness. Better integration within this medical function could facilitate returning more soldiers to duty.

Additionally, the division dental surgeon could serve as the lead for MASCAL and triage planning and

Capt. Benjamin Lewis Salomon
1 September 1914–7 July 1944

Front-line dental surgeon Capt. Benjamin Lewis Salomon posthumously received the Medal of Honor in 2002 for exceptional bravery during the Battle of Saipan in World War II. On 7 July 1944, Salomon was serving at Saipan in the Marianas Islands as the dental surgeon for the 2nd Battalion, 105th Infantry Regiment, 27th Infantry Division. When Japanese soldiers overran the hospital, he provided cover fire to allow the safe evacuation of the wounded, although he had no hope for personal survival. Salomon killed as many as ninety-eight Japanese troops before dying of seventy-six bullet wounds and countless bayonet wounds. Salomon's extraordinary heroism and devotion to duty reflect the highest traditions of military service. He was one of only three Jewish Americans and the only dentist to receive the Medal of Honor for actions during World War II.

(Photo courtesy of the AMEDD Center of History & Heritage)

coordination within the division surgeon's section. Dental officers have adequate medical training and administrative experience to serve in this role for a division staff. At the brigade support battalion, company-grade dental officers traditionally serve as the triage officer alongside a senior medic or nurse. This tactical experience, paired with professional education, prepares a field-grade dental officer for these additional responsibilities. In LSCO, we must change our approach to triage under the constraints of limited resupply, contested air evacuation, and simultaneous MASCAL events. A division dental surgeon could take the lead to develop MASCAL and triage plans within the division. Similarly, with their experience in patient hold, a division nurse could lead efforts in prolonged field care. This would empower the division surgeon and deputy surgeon to focus their efforts on command and control, treatment, and evacuation.

Consultant for expeditionary dentistry. By 2028, dental officers with far-forward operational experience from OEF and OIF deployments will have left active duty or retired. This represents a growing knowledge gap for the Army as valuable institutional experience is lost. A consultant for expeditionary dentistry to the Office of the Surgeon General is needed to document best practices, preserve lessons learned, and maintain operationally focused training. The consultant would also advocate for dental billets across FORSCOM and SOF while advising the Dental Corps-specific branch proponent officer on individual critical tasks lists for dental officers. The position should be a collateral duty for a field-grade, operationally experienced dental officer to ensure the Dental Corps is retaining knowledge while moving toward an MDO-capable force. This role will become more critical as strategy changes and as dental services undergo modernization.

Conclusion

Previous authors anticipate that dental patients can account for 17 to 19 percent of all patients in theater.[18] We can extrapolate these percentages to align with the new concept of the division as the unit of action. Within a division of thirty-five thousand soldiers, there could be up to 6,650 dental

DNBI. These soldiers would subsequently be absent from the battlespace for three to ten days during evacuation and treatment.[19] To mitigate the risk associated with the volume of these patients, dental officers must be formally trained to perform battlefield circulation in austere environments down to the point of need. Dental officers must also be prepared for casualty response they will encounter during circulation. To achieve the goal of an MDO capable and ready force by 2028/2035, we must lean toward hands-on training.[20] A division dental surgeon can integrate dental services within the area of operations and take the lead for MASCAL planning and coordination. Lastly, a consultant for expeditionary dentistry can provide strategic guidance for curriculum development, equipment modernization, and individual critical tasks lists. ■

Notes

1. "The Army Health System in Support of U.S. Army Multi-Domain Operations" (white paper, U.S. Army Medical Center of Excellence, JBSA Fort Sam Houston, Texas, May 2020).

2. Paul M. Colthirst et al., "Operational Cost Analysis of Dental Emergencies for Deployed US Army Personnel during Operation Iraqi Freedom," *Military Medicine* 178, no. 4 (April 2013): 427–31, https://doi.org/10.7205/MILMED-D-12-00431.

3. Mathieu Gunepin et al., "Medical Evacuation of French Forces for Dental Emergencies: Operation Serval," *Military Medicine* 180, no. 5 (May 2015): 578–81, https://doi.org/10.7205/MILMED-D-14-00528.

4. John Simecek et al., "The Incidence of Dental Disease Nonbattle Injuries in Deployed U.S. Army Personnel," *Military Medicine* 179, no. 6 (June 2014): 666–73, https://doi.org/10.7205/MILMED-D-13-00511.

5. Clinton Murray et al., "Spectrum of Care Provided at an Echelon II Medical Unit during Operation Iraqi Freedom," *Military Medicine* 170, no. 6 (June 2005): 516–20, https://doi.org/10.7205/MILMED.170.6.516.

6. Barbara Wojcik et al., "Risk of Dental Disease Non-Battle Injuries and Severity of Dental Disease in Deployed U.S. Army Personnel," *Military Medicine* 180, no. 5 (May 2015): 570–77, https://doi.org/10.7205/MILMED-D-14-00364.

7. *Waypoint in 2028 – Multidomain Operations*, YouTube video, posted by "Army University Press," 3 December 2021, accessed 5 July 2022, https://www.youtube.com/watch?v=OUZp01Cjdil.

8. Peter Guevara, "CSBPO Dental Corps Brief" (lecture, Medical Center of Excellence, JBSA Fort Sam Houston, TX, 8 April 2022).

9. James A. Nicholson, Justin N. Searor, and Andrew D. Lane, "Editorial on the Approach to Prolonged Field Care for the Special Forces Medical Sergeant: Balancing the Opportunity Cost," *Journal of Special Operations Medicine* 20, no. 3 (2020): 117–19, https://www.doi.org/10.55460/N1TD-UE0E.

10. Department of Defense Instruction 2000.30, *Global Health Engagement (GHE) Activities* (Washington, DC: Department of Defense, 2017), accessed 27 June 2022, https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/200030_dodi_2017.pdf.

11. Army Techniques Publication 4-02.19, *Dental Services* (Washington, DC: U.S. Government Publishing Office, August 2020), accessed 27 June 2022, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN30126-ATP_4-02.19-000-WEB-1.pdf.

12. Erin Savage et al., "Tactical Combat Casualty Care in the Canadian Forces: Lessons Learned from the Afghan War," *Canadian Journal of Surgery* 54, no. S6 (2011): S118–23, https://doi.org/10.1503/cjs.025011.

13. Brian J. Eastridge et al., "Death on the Battlefield (2001-2011): Implications for the Future of Combat Casualty Care," *Journal of Trauma and Acute Care Surgery* 73, no. 6 Supp. 5 (December 2012): S431–37, https://doi.org/10.1097/TA.0b013e3182755dcc.

14. Russ Kotwal et al., "Eliminating Preventable Death on the Battlefield," *Archives of Surgery* 146, no. 12 (December 2011): 1350–58, https://doi.org/10.1001/archsurg.2011.213.

15. Ibid.

16. *2005 Posture Statement: Our Army at War—Relevant and Ready … Today and Tomorrow*, 109th Cong., 1st sess. (2005) (statement of Francis J. Harvey and Peter J. Schoomaker), accessed 15 July 2022, https://www.army.mil/e2/downloads/rv7/aps/aps_2005.pdf.

17. C. Todd Lopez, "Brigade Combat Teams Cut at 10 Posts Will Help Other BCTs Grow." Army.mil, 26 June 2013, accessed 15 July 2022, https://www.army.mil/article/106373/brigade_combat_teams_cut_at_10_posts_will_help_other_bcts_grow.

18. Simecek et al., "The Incidence of Dental Disease Nonbattle Injuries in Deployed U.S. Army Personnel," 666–73; Murray et al., "Spectrum of Care Provided at an Echelon II Medical Unit during Operation Iraqi Freedom"; Nicholson, Searor, and Lane, "Editorial on the Approach to Prolonged Field Care for the Special Forces Medical Sergeant: Balancing the Opportunity Cost," 117–19.

19. Colthirst et al., "Operational Cost Analysis of Dental Emergencies for Deployed US Army Personnel during Operation Iraqi Freedom," 427–31; Gunepin et al., "Medical Evacuation of French Forces for Dental Emergencies: Operation Serval," 578–81.

20. U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 525-3-1, *The US Army in Multi-Domain Operations 2028* (Fort Eustis, VA: TRADOC, 2018).

Replacement troops board a train 28 April 1919 en route to the embarkation port in Fort Meade, Maryland, in preparation for sea movement to Europe to join the post-World War I Army occupation. (Photo by Sgt. Steiniger, S.C., courtesy of the National Archives)

The Individual Replacement Process

Will It Work?

Brig. Gen. Hope Rampy, U.S. Army
Lt. Col. William C. Latham Jr., U.S. Army, Retired

The U.S. Army requires a proven solution for providing individual replacements to support large-scale combat operations (LSCO). When it transitioned to a modular force structure, the Army eliminated the replacement battalions and companies previously responsible for executing the replacement

management process. The last replacement company inactivated in 2007. The Army still fields human resources companies, but these are not designed to execute the personnel replacement process. In place of the old replacement pipeline, the Army now relies on the theater distribution network to deliver personnel when and where they are needed.[1]

But will that approach work in a major conflict? The Army practices replacement operations during Warfighter exercises with corps and division staffs. Managed by the Mission Command Training Program (MCTP), these nine-day exercises focus on mission command, staff processes, procedures, and relationships. The exercises are guided by training objectives established by the training audience's senior mission commander.[2]

Unfortunately, resource constraints limit the scope of these exercises; most Warfighters focus on division-level operations, a few exercises focus on corps operations, and none focus on the theater. Those same constraints limit realism, particularly within the sustainment warfighting function, where digital conflicts avoid real-world problems such as inprocessing delays, traffic congestion, and the normal friction associated with reception, staging, onward movement, and integration. In addition, technological limitations preclude the use of mission command systems such as the Deployed Theater Accountability System, further distorting the process.[3]

Despite these limitations, the MCTP program does its best to replicate the replacement process. Units routinely struggle with incorporating human resources (HR) planners within operational planning teams and critical battle rhythm events. In addition, staff officers struggle to identify specific roles and responsibilities of key players such as the corps G-1 and the HR planners within the expeditionary sustainment command. Finally, the critical process of casualty estimates rarely gets enough attention. Units frequently neglect to update these estimates based on battlefield developments, impeding effective replacement operations. According to Lt. Col. Amy Hood, senior HR observer controller at MCTP, success or failure usually depends on the integration of HR planners within the support operations office and the G-1.[4]

The speed and lethality of LSCO will likely test that integration, producing thousands of casualties and a corresponding need for thousands of replacements. Those replacements will either deploy in organized units or as individuals. Individual replacements, or nonunit-related personnel (NRP), may include both military and Army civilian personnel. Wounded personnel returned to duty will fill some of this demand, but most NRP are likely to deploy from the continental United States (CONUS).[5]

During early stages of a LSCO, the Army plans to draw most individual replacements from the active component. Assuming a LSCO leads to full mobilization, the Army will likely turn to the Ready Reserve, which includes Individual Ready Reserve, Standby Reserve, and Retired Reserve soldiers. While most American males register for selective service within thirty days of turning eighteen, any decision to reinstate the draft would require congressional legislation.[6]

Planning for NRP Replacement Operations

While the Department of the Army recruits, trains, and deploys individual replacements from CONUS, the theater Army assumes responsibility for delivering them to the right location once they arrive in theater. That delivery process, which involves moving personnel replacements through the theater distribution network, demands centralized planning and decentralized execution.[7]

The theater Army commander's principal staff officer for human resources support, the G-1, supports this planning effort by monitoring personnel strength, projecting future requirements, and prioritizing replacements. The G-1 human resources operations center

Brig. Gen. Hope C. Rampy is the director of military personnel management, Office of the Deputy Chief of Staff, G-1, Headquarters, Department of the Army. She previously served as the 62nd adjutant general of the U.S. Army. She holds a BA from Cameron University and an MBA from Touro University.

Lt. Col. William C. Latham Jr., U.S. Army, retired, is a member of the U.S. Army Combined Arms Support Command staff. He has written extensively on military affairs and is the author of *Cold Days in Hell: American POWs in Korea*. He holds a BA from Georgetown University and an MA from the University of Alaska, Fairbanks.

(HROC) will coordinate with the theater sustainment command (TSC) and its assigned theater personnel operations center (TPOC) to integrate personnel movements within the theater concept of support. The TSC will synchronize NRP replacement operations as part of its larger operational responsibilities for theater distribution and sustainment.[8]

At the TSC, the distribution management center (DMC) within the support operations office analyzes requirements and capabilities to develop a feasible concept of support for every contingency. Most of this sustainment planning addresses the distribution network's ability to forecast and deliver commodities—such as fuel, ammunition, and repair parts—in support of the concept of operations. Personnel replacements, however, will travel through the same network as hellfire missiles and spare tires.[9]

Unlike commodities, those replacements need considerable support in transit. Lt. Gen. Christopher Mohan, who commanded the 21st Theater Sustainment Command in Europe between 2019 and 2021, highlights this point: "We thought of it [personnel replacement operations] in terms of synchronization with other commodities."[10]

The critical element for NRP operations within the DMC is the theater personnel operations center, which plans, integrates, and sustains theater-wide HR support, including early entry reception operations and coordinating personnel replacement priorities. The TPOC is replacing the Human Resource Sustainment Center organization. The TPOC coordinates with the theater Army G-1 HROC, manages myriad HR responsibilities, and anticipates NRP requirements to ensure synchronization with other sustainment priorities within the concept of support.[11]

The TPOC plays an indispensable role in the planning phase of NRP replacement operations. Effective integration of NRP issues within the larger concept of sustainment requires TPOC planners to synchronize their efforts with other elements within the DMC. Because of the unique requirements involved in moving personnel, the TPOC should work closely with the theater movement control element to coordinate appropriate modes of transport for NRP.[12]

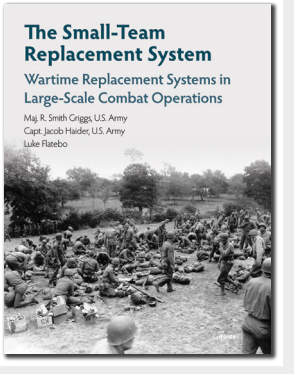
Other NRP replacement considerations include the following:

- Command and control
- Personnel accountability
- Emergency personnel services
- Billeting
- Transporting
- Equipping
- Medical support
- Food service
- Force protection

Many of these issues impact the entire distribution network. The DMC staff, including the TPOC, should complete a troop-to-task analysis of these activities, anticipating requirements and allocating sufficient resources to address each function.[13]

The size and scope of LSCO magnify the complexity of this planning. Replacements may arrive at several different aerial ports of debarkation (APOD) and move several hundred kilometers along multiple routes to reach their gaining units. In addition, these movements may include several modes of transportation and will likely involve multiple stops at intermediate staging bases, convoy support centers, and other nodes within the distribution network.[14]

The authors of "The Small-Team Replacement System: Wartime Replacement Systems in Large-Scale Combat Operations" posit that building and maintaining combat power in the face of high-intensity combat casualty rates requires an effective personnel replacement system. They propose a small-team replacement system to meet the challenges of large-scale combat operations. To view this article from the January-February 2020 edition of *Military Review*, visit https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/JA-20/Haider-Replacements-3.pdf.



The Theater Distribution Network

In the designated theater of operations, that network begins at the APOD, normally within the joint security area, where NRP arrive from a replacement center in CONUS. At the APOD, a movement control team from the TSC will track their movement within the transportation coordinators' automated information for movement system, meet the aircraft, and escort replacements to the theater gateway, where a theater gateway personnel accountability team will record their arrival within theater, utilizing the tactical personnel system.[15]

Staff Sgt. Tommie McKissack (*left*), Warrant Officer Joshua Thibodeaux, and Staff Sgt. Solomon Griffin Jr. finalize Tactical Personnel System files and upload data into the Deployed Theater Accountability System 5–6 May 2022 in Bardofuss, Norway. Their mission ensured the accountability of all personnel of the 4th Brigade, 25th Infantry Division. (Photo by Capt. Thomas Malerk, U.S. Army)

The theater gateway may locate within the APOD or at a nearby installation. In Kuwait, for example, U.S. Army Central Command operates a theater gateway at Camp Arifjan, a few miles south of its APOD in Kuwait City. The theater gateway provides limited personnel services for arriving replacements, such as replacement identification cards, and necessary life support such as lodging, food service, and medical support.[16]

From the theater gateway, the flow of replacements depends on available transportation. Movement control teams on-site will coordinate their departure based on priority of movement and availability of transportation. Where possible, replacements will likely move by ground transport, such as commercial buses, but onward movement may require either air or sea transport.

Movement to the forward area may take several days and require multiple stops. Alternatively, replacements may travel to a regeneration site where they are assigned and trained on a weapons system such as a tank or howitzer to provide the gaining command with a fully trained crew.[17]

As part of its mission to set the theater, the DMC must coordinate force protection, life support, and limited personnel services at each location. Because many of these resources will depend on commercial support, the DMC should review the size and scope of existing contracts and develop requirements packages where necessary. In addition, the TSC will need to establish a method of command and control to ensure good order and discipline during these movements. Finally, the planning process must account for the strong likelihood that personnel movements will compete with other movement requirements for transportation assets and time and space on available road networks.[18]

What Can Go Wrong?

Competition for transportation assets makes this process especially difficult. Personnel replacements are important, but mechanized forces absolutely cannot fight without fuel and ammunition. As a result, these two commodities attract the most attention from sustainment planners and coincidentally, consume the lion's share of cargo space on available transportation assets. In a well-trained, fully manned DMC, TPOC

planners will attend the right meetings, participate on the right operational planning teams, and integrate the theater Army commander's replacement priorities within the TSC's initial distribution plan and at subsequent movement coordination boards.[19]

Arguably, the first weak link in this chain is the distribution planning process, during which the planners match requirements against capabilities in accordance with the commander's priorities. Personnel shortages, task overload, and lack of time for collective training and rehearsals threaten the effectiveness of every staff. These roadblocks pose a unique challenge to the planning process for replacement operations due to the anticipated scope of requirements and the unique considerations for moving personnel forward into a combat zone. Cross talk and collaboration between the Army G-1, HROC, TSC support operations, and the TPOC chief will ensure that replacements get the necessary attention during distribution operations.[20]

The second weak link is the availability of replacements from CONUS. The Department of the Army will resource initial requirements from the active force, with volunteers, excess personnel, and low-density military occupational specialties (MOS) in nondeploying units topping the list. In a LSCO, however, the Army is likely to deploy the majority of its active-duty forces within the first few weeks, limiting the pool of available replacements within the Active Component. Reserve Component forces will deploy next, but their mobilization requires legislative and presidential authority, which may be too slow. Any delays within the political process will negatively impact combat power in theater.[21]

The enemy always gets a vote, and therein lies the third weak link. Once replacements arrive, they must survive their movement through a fragile theater distribution network. With its reliance on air and seaports, highways, bridges, rail lines, pipelines, bases, and digital communications, the distribution network is inherently vulnerable to myriad enemy capabilities, from special operations to cyberattacks to weapons of mass destruction.[22]

Recommendations

Given the inevitable need for replacements in the next conflict, what can the Army do now besides hope for the best? The following ideas will improve our ability to integrate this capability within theater distribution networks.

“With its reliance on air and seaports, highways, bridges, rail lines, pipelines, bases, and digital communications, the distribution network is inherently vulnerable to myriad enemy capabilities, from special operations to cyberattacks to weapons of mass destruction.”

First, sustainment leaders should demand a casualty estimate (by MOS and rank) for every operation plan. People are our most important resource, but without an estimate of projected losses, planners cannot accurately predict distribution requirements.

Second, the U.S. Army Training and Doctrine Command should teach the NRP replacement process within the Army's theater sustainment planners' course, support operations course, mobilization planners' course, and other professional military education courses.

Third, the U.S. Army Training and Doctrine Command should add rigor to NRP replacement operations during division and corps Warfighter exercises. These exercises often include a full complement of sustainment units and corresponding observer-trainers. Training objectives, however, tend to focus on how well the distribution network delivers commodities such as fuel and ammunition, overshadowing the complexities involved in moving actual soldiers through the same pipeline.[23] Adding NRP challenges to the mix would underline the sustainment commander's responsibility to integrate replacement operations

within the distribution plan. At the same time, commanders must resist the urge to avoid replacement operations by hitting reset during these exercises.

Lastly, senior mission commanders should stress NRP replacement operations during theater and mobilization exercises. Current exercises re-create portions of the NRP process, but this replication usually happens on a small scale, wishing away the tyranny of time and distance that makes theater distribution so difficult. Better yet, given the critical importance of sustainment within LSCO, the Army's senior leaders should consider investing in a corps Warfighter to stress test the entire theater distribution process.

Conclusion

We will need replacements in the next war. If that war involves LSCO, we will need replacements at a scale not encountered in the past seventy-five years. The new process looks good on paper, but a test drive is in order. We need to teach our leaders, train our soldiers, and exercise this capability now while we have the time to adjust. ■

Notes

1. Derrick Lucarelli, "Personnel Replacement Operations: Sustaining the Personnel Component of Combat Power during Large-Scale Combat Operations," *Army Sustainment* 53, no. 3 (July–September 2021): 32–35, accessed 18 May 2022, https://www.army.mil/article/249269/personnel_replacement_operations_sustaining_the_personnel_component_of_combat_power_during_large_scale_combat_operations; Field Manual (FM) 1-0, *Human Resources* (Washington, DC: U.S. Government Publishing Office [GPO], August 2021); FM 4-0, *Sustainment Operations* (Washington, DC: U.S. GPO, 31 July 2019), para. 2-101.

2. "Mission Command Training Program (MCTP)," U.S. Army Combined Arms Center, accessed 14 March 2022, https://usacac.army.mil/organizations/cact/mctp; Amy Hood (lieutenant colonel, senior human resources observer, coach/trainer, Operations Group Alpha, Mission Command Training Program), in discussion with the author, 23 February 2022.

3. Ibid.

4. Ibid.; Amy Hood (lieutenant colonel, senior human resources observer, coach/trainer, Operations Group Alpha, Mission Command Training Program), in discussion with the author, 1 March 2022; Shane P. Morgan, *MCTP Key Observations, FY 21.1: Mission Command Training in Large-Scale Combat Operations* (Fort Leavenworth, KS: Center for Army Lessons Learned, April 2021), accessed 18 May 2022, https://api.army.mil/e2/c/downloads/2021/05/03/d394b9ec/18124.pdf.

5. FM 3-0, *Operations* (Washington, DC: U.S. GPO, 6 December 2017), para. 1-3; Army Regulation (AR) 600-8-111, *Army Mobilization, Manning, and Wartime Replacement Operations* (Washington, DC: U.S. GPO, 25 August 2019), chap. 3, accessed 18 May 2022, https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN8113_AR600-8-111_FINAL.pdf.

6. Ibid.; David Sheridan (Headquarters, Department of the Army, Office of the Deputy Chief of Staff, G-1), in discussion with the author, 1 March 2022.

7. AR 600-8-111, *Army Mobilization, Manning, and Wartime Replacement Operations*; FM 6-0, *Commander and Staff Organizations and Operations* (Washington, DC: U.S. GPO, May 2015), chap. 9.

8. FM 4-0, *Sustainment Operations*, para. 2-102.

9. Army Techniques Publication (ATP) 4-0.1, *Army Theater Distribution* (Washington, DC: U.S. GPO, October 2014), para. 2-42–2-44; FM 1-0, *Human Resources*, para. 1-26.

10. Christopher Mohan (commander, U.S. Army Sustainment Command), in discussion with the author, 27 September 2021.

11. FM 1-0, *Human Resources*, para. 2-39; Barcary J. Lane (director, Human Resource Sustainment Center, 8th Theater Sustainment Command), in discussion with the author, 1 March 2022.

12. FM 1-0, *Human Resources*, para. 1-26; ATP 4-0.1, *Army Theater Distribution*, para. 2-50–2-54. For additional information on movement planning, see ATP 4-16, *Movement Control* (Washington, DC: U.S. GPO, 15 April 2013).

13. FM 1-0, *Human Resources*, para. 3-87.

14. FM 4-0, *Sustainment Operations*, para. 5-119–5-123; see also ATP 4-0.1, *Army Theater Distribution*, chap. 4.

15. FM 4-0, *Sustainment Operations*, para. 4-57–4-63, para. 4-72, chap. 5.

16. Ibid., para. 4-54; FM 1-0, *Human Resources*, para. 2-47; Davie Wright (G-1, U.S. Army Central Command), in discussion with the author, 26 March 2021.

17. Wright, discussion; Mohan, discussion; ATP 4-94.4, *Reconstitution Operations* (Washington, DC: U.S. GPO, May 2021), para. 4-37, para. 4-72.

18. FM 4-0, *Sustainment Operations*, para. 4-62, para. 4-63, para. 4-74; FM 1-0, *Human Resources*, para. 2-45; ATP 4-11, *Motor Transport Operations* (Washington, DC: U.S. GPO, 14 August 2020), chap. 3; ATP 4-10, *Multi-Service Tactics, Techniques and Procedures for Operational Contract Support* (Washington, DC: U.S. GPO, 18 February 2016).

19. FM 1-0, *Human Resources*, para. 1-55, para. 2-42.

20. Lane, discussion.

21. Sheridan, discussion.

22. FM 4-0, *Sustainment Operations*, para. 5-13–5-18.

23. Hood, discussion, 23 February 2022.

New U.S. Army Human Resources System Is the Change the Army and Its Soldiers Need

Col. Rebecca L. Eggers, U.S. Army

The Army is in the process of fielding an innovative, online human resources (HR) system for soldiers called the Integrated Personnel and Pay System-Army (IPPS-A). In March 2020, the Army completed IPPS-A fielding to the Army National Guard (ARNG). In September 2022, IPPS-A will integrate the Active and Reserve Components—bringing all 1.1 million soldiers online into a single system. In just two short years, IPPS-A has proven to be a comprehensive transformation in the way the ARNG carries out HR functions. The system provides increased visibility for commanders at all levels, streamlines workflows for HR professionals, and improves soldiers' pay accuracy and timeliness.

Out with the Old, In with the New

IPPS-A will provide modern personnel, pay, talent, and analytic capabilities in a single system to all Army components for the first time. Additionally, IPPS-A will provide enhanced decision-making and search-and-match capabilities to enable Army leaders to better manage the unique talents of individual soldiers across the Total Force. IPPS-A creates much needed transparency for soldiers. Lost promotion or leave packets will be a thing of the past. Soldiers will be able to track their personnel actions from submission through approval from their mobile devices.

For decades, the Army used over two hundred antiquated HR and pay systems with over 650 interface and data exchanges to handle its soldiers' administrative needs. The Army's industrial age HR processes were driven by pen-and-paper forms, as well as in-person appointments. IPPS-A modernizes Army HR by combining personnel and pay changes into a single digital transaction, allowing soldiers to see the status of those actions real-time from their mobile devices. Upon IPPS-A's full deployment, it will replace over thirty legacy systems and eliminate approximately three hundred interfaces.

IPPS-A Positively Impacts Soldier Pay

Because the Army's current personnel and pay processes require separate actions, soldiers are at risk of experiencing delayed pay or debt. For example, soldiers leaving the Army with unprocessed leave requests incur a debt to the Army through no fault of their own. Additionally, soldiers can often experience delays in charged leave while waiting for both transactions to be completed. Beginning in September, IPPS-A will automatically send pay transactions—eliminating the possibility of delay.

Delays in pay can also occur when a soldier gets promoted but the pay transaction is not completed in a timely fashion. Prior to IPPS-A's fielding to the ARNG, this often happened when new soldiers arrived at basic training. A soldier would arrive with a promotion order indicating his or her new rank and, upon arrival to training, that form would need to be processed by the local

Soldiers assigned to the 335th Signal Command attend an Army Integrated Personnel and Pay System (IPPS-A) class in Pinellas Park, Florida, on 2 May 2022. IPPS-A is the Army's online human resources (HR) solution to provide integrated HR capabilities across all Army components. (Photo by Sgt. Tarako Braswell, U.S. Army)

finance office to establish the soldier's pay record. IPPS-A automates this entire process. When a soldier is approved for promotion to the next rank by a commander, IPPS-A automatically sends the pay transaction to finance. Now, ARNG soldiers arriving to reception centers already have established pay records based on the pay transactions sent when their promotions were approved, and they get paid in accordance with their new rank upon arrival.

IPPS-A has streamlined several personnel and pay transactions for the ARNG while maintaining pay accuracy rates for those transactions of over 99 percent for over two years. And remarkably, in April 2022, IPPS-A accurately processed 100 percent of submitted transactions. This increased accuracy rate for pay transactions has a direct impact on soldiers. Release 3 will bring this enhanced pay reliability to the Total Force in September. Soldiers deserve accurate and timely pay for their commitment and dedication.

IPPS-A Quickly Adapts to Changing Policy

IPPS-A streamlines the process for transferring between deployments, assignments, and components—easing mobilization and demobilization actions. A key to this process is the method to start benefits such as TRICARE and the system's ability to adjust to changing requirements for soldiers. Most recently, in support of COVID-19 operations and to support civil unrest call-ups in multiple states, IPPS-A implemented rapid software updates to execute timely soldier pay and benefit transactions. These updates were required based on approved changes in benefits for soldiers mobilized to support these necessary operations. Additionally, IPPS-A's greatly improved capabilities allowed one state to cut its soldier readiness processing time in half. Yet another state leveraged IPPS-A's web-based capability to mobilize soldiers from several different locations simultaneously. And if assistance was needed, the integrated system allowed experts at every level to quickly assist remotely.

As the Army continues to mobilize units and soldiers in support of operations overseas, or in the event of a large-scale combat operation, IPPS-A's capabilities will be a combat multiplier that has proven its potential to rise to the occasion.

Col. Rebecca L. Eggers, U.S. Army, is the Functional Management Division chief for Integrated Personnel and Pay System-Army (IPPS-A). She is holds a BS in accounting from Bryant College, an MBA in human resource management from the University of Wisconsin-Whitewater, and an MS in national resource strategy from the Eisenhower School, National Defense University. Prior to IPPS-A, she served as the division G-1, Combined Joint Forces Land Component Command-Operation Inherent Resolve J-1, Iraq, for the 101st Airborne Division (Air Assault), Fort Campbell, Kentucky, and as the executive officer, joint management officer and 4-/3-star nominations officer in the Army General Officer Management Office, Washington. She also served as the deputy chief, XVIII Airborne Corps, Readiness Division; and in the Enlisted Personnel Management Division at Army Human Resources Command, Fort Knox, Kentucky. She deployed to Kuwait to serve as the chief of the Personnel Accounting and Strength Reporting Branches for the U.S. Army Central.

IPPS-A Increases Visibility Across the Force

IPPS-A's integrated nature ensures a common operating picture at every level of the Army, unlike our current environment where different systems are used at the enterprise and the user levels. IPPS-A Release 2 allows the National Guard Bureau to see soldiers across the fifty-four states and territories without requiring aggregation from different systems. When the Army delivers Release 3 in September, Army senior leaders will have a complete view of total Army strength for the first time.

IPPS-A's talent management framework allows soldiers to upload knowledge, skills, and behaviors into their profile unrelated to their specialty and rank. Leaders at every level can then leverage this data to seek out soldiers with skill sets required to complete their units' unique missions. And for the first time, the Reserve Component will have the ability to see soldiers who are separating from the Active Component and coming to their state or location, allowing for targeted recruiting. Moreover, soldiers will have unprecedented mobile access to their personnel records. They will be able to securely submit HR requests and track their progress from start to finish. Additionally, soldiers will be able to view approvals and explanations, saving them a trip to the G-1/S-1 shop. Through the app, self-service transactions are automated, paper-free, and transparent.

What Can Users Expect from Release 3?

Release 3 will provide a foundation to facilitate the Army Talent Alignment Process across the force. IPPS-A will provide commanders, HR managers, and career managers visibility of the immense talent in their formations. For example, IPPS-A will be used to issue assignment orders and will initiate a Total Force Marketplace with talent management capabilities for all components and ranks. Commanders and other senior leaders will be able to view a soldier's full array of talents and abilities, thus providing leaders with a more comprehensive talent profile for everyone to help the Army make data-driven decisions when determining a soldier's next assignment. IPPS-A will empower soldiers, HR professionals, and leaders with the right tools to optimize contributions to Army readiness, thereby transforming the Army's industrial age personnel and pay systems into an integrated twenty-first-century talent management and data-driven human capital enterprise system.

What Do Active and Reserve Soldiers Need to Do to Prepare?

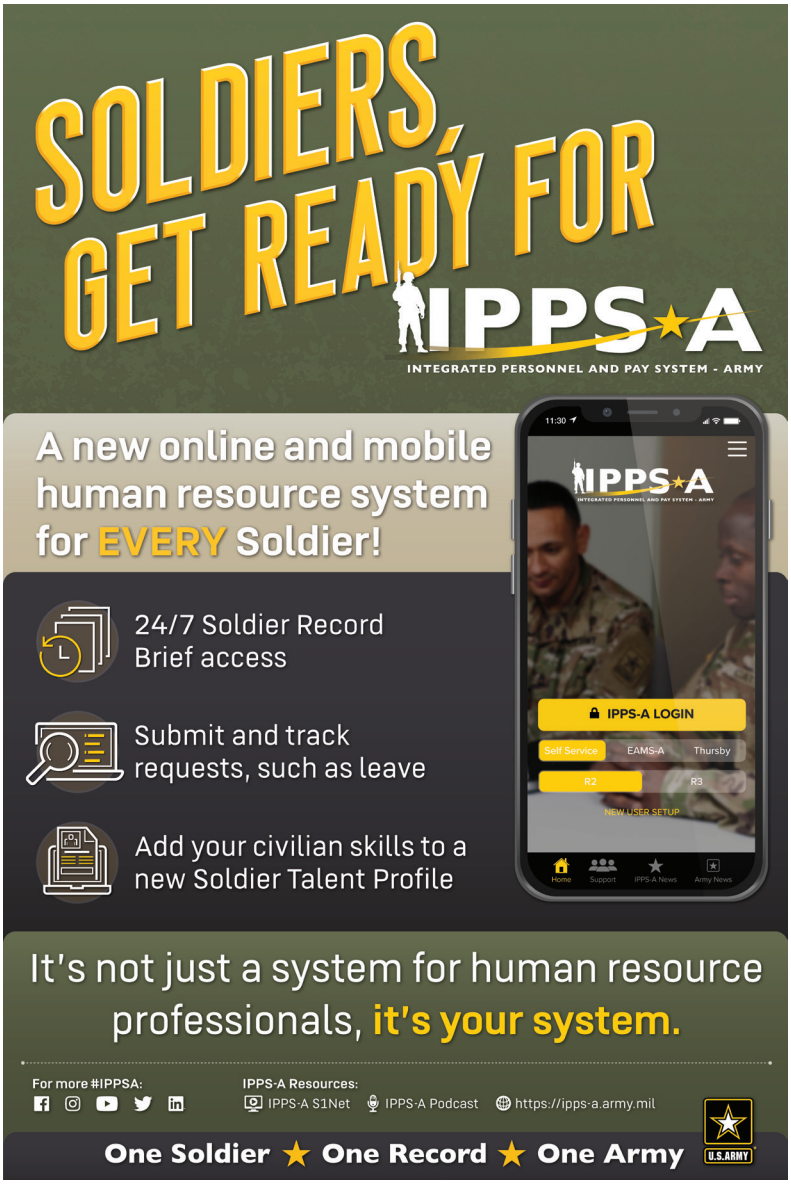
The first step is data correctness: "PMCS Your Records." During Release 2, IPPS-A leadership realized the importance of having up-to-date personnel records prior to the implementation of the system. Any existing data inaccuracies or issues were transferred to IPPS-A during the ARNG deployment. IPPS-A's ongoing data correctness campaign is designed to identify and fix inconsistencies within every personnel record as active and reserve forces prepare for their conversion to IPPS-A. There are essential tasks for soldiers, units, and system owners to follow. Soldiers should review and coordinate with their S-1s to correct HR record errors in

the Defense Manpower Data Center, the Army Training Requirements Resources System, Soldier Record Briefs, the Digital Training Management System, and Leave and Earnings Statements.

The second step is to participate in essential training. Release 3 distance-learning training is available for all users. There are also many resources such as webinars, podcasts, HR and pay summits, videos, and user guides available on IPPS-A social media and S1Net. The IPPS-A team is using comprehensive role-based training to prepare HR professionals and leaders for operations in IPPS-A. It is critical that anyone performing and/or approving HR actions complete this mandatory training. IPPS-A utilizes the train-the-trainer model, which provides unit-level hands-on training and develops organizational subject-matter experts.

A Game Changer for the Army

IPPS-A is a game-changer for the Total Army and the largest HR enterprise resource planning system in the world. As the program progresses through Release 3, the IPPS-A team urges active and reserve soldiers to remember they must prepare—IPPS-A is coming, and this modernization is happening with the involvement and support of Army senior leaders. ■



A promotional poster for the Release 3 of IPPS-A. (Graphic courtesy of IPPS-A)

For more information and resources on IPPS-A, visit our website at http://www.ipps-a.army.mil/. You can also follow IPPS-A on YouTube, Facebook, Twitter, LinkedIn, and Instagram for constant updates.

https://www.youtube.com/c/ippsa

https://www.facebook.com/armyippsa

https://twitter.com/IPPSArmy

https://www.linkedin.com/company/ipps-a/

https://www.instagram.com/usarmy_ippsa/

Sgt. Kyle McAuley (*right*), Legion Troop, 1st Battalion, 503rd Infantry Regiment (Airborne), 173rd Infantry Brigade Combat Team (Airborne), directs Spc. Antonio Carroll, Attack Troop, 1st Battalion, 503rd Infantry Regiment (Airborne), 173rd Infantry Brigade Combat Team (Airborne), as Carroll prepares to fire an FIM-92 Stinger during a training exercise 25 April 2018 at Hohenfels, Germany. The Joint Warfighting Assessment helps the Army evaluate emerging concepts, integrate new technologies, and promote interoperability within the Army and with other services, U.S. allies, and partners. (Photo by Staff Sgt. Kalie Frantz, U.S. Army)

Warfighting

A Function of Combat Power

Maj. Thomas R. Ryan Jr., U.S. Army

It is military dogma that the nature of war will never change, only how we perform its fatal rituals.[1] The domains in which these acts manifest have remained defined and understood throughout history—land, sea, air—with a few added more recently—space and cyberspace.[2] For the U.S. Army, understanding how to synchronize across domains is not a new pursuit. Over time, the phrasing transformed from dimensions to cross-domain, to what it is now multi-domain.[3] As we begin to understand the

multi-domain framework, research already presents how challenging it will be.

In a 2019 report titled *European Allies in U.S. Multi-Domain Operations*, authors Jack Watling and Daniel Roper open with, "Russian and Chinese long-range fires, combined with non-lethal standoff able to shape the operational environment prior to conflict, have led the US Army to conclude that AirLand Battle—the underlying doctrine for its operations—has been 'fractured.'"[4] It will take a new way of thinking to break into our competition's antiaccess and area denial should conflict ensue. The new cognitive framework the U.S. Army is pursuing is multi-domain operations (MDO), and it requires convergence of combat power at a specific instance in time and space.[5] The traditional ways in which we organize warfighting are not as clear as they used to be.

The central idea for the U.S. Army's MDO is to "penetrate and dis-integrate enemy anti-access and area denial systems and exploit the resultant freedom of maneuver to achieve strategic objectives (win)."[6] To achieve this, the U.S. Army will leverage a "calibrated force posture, multi-domain formations, and convergence."[7] Convergence is defined as "rapid and continuous integration of capabilities in all domains, the EMS [electromagnetic spectrum], and information environment that optimizes effects to overmatch the enemy through cross-domain synergy and multiple forms of attack all enabled by mission command and disciplined initiative."[8] The only way to fully implement this strategy is to ensure it is properly accounted for during the planning process at echelon.

Traditionally, U.S. Army commanders and their staffs organize planning using a framework called combat power, with a subset of those elements called the warfighting functions. Army Doctrine Publication (ADP) 3-0, *Operations*, states, "The purpose of warfighting functions is to provide an intellectual organization for common critical capabilities available to commanders and staffs at all echelons and levels of warfare."[9] Based on the ever-changing domains and understanding of how we organize for combat, the U.S. Army's elements of combat power may be "cul-de-sacs leading to a dead end" of understanding.[10] We are anchored to fitting all aspects of warfare into those categories.[11] To expose our bias and explore new opportunities, a different way of thinking is required.

Systems thinking is built on the premise that all cognition follows the rules of distinction, system, relationship, and perspective, which helps us navigate those categories with a newfound understanding.[12] The use of these rules enables self or organizational awareness toward the logic used to construct current models. Applied systems thinking yields stronger mental models or can help reframe old ones. To acknowledge the influence of Baron de Jomini on the U.S. military thinking and whose principles of war can be "almost mathematical," one such mental model is the mathematic equation and how each variable can represent a systems of equations, and the parameters that make them up—in this case the elements of combat power.[13]

The aim of this article is to achieve two outcomes: first, to demonstrate how mathematical modeling is a unique way to visualize old relationships leading to novel insights and deeper understanding; and second, to propose to senior leaders in the Department of Defense (specifically, the Army) that the way we think may be anchoring us toward an incomplete understanding of the future.[14] Hopefully these outcomes will generate discussion among senior leaders in the Department of Defense that our framework might be in need of new thinking, even if math is an obstacle.

The Formal Representation of the Elements of Combat Power

ADP 3-0 explains combat power (the left side of the equation in figure 1, page 63): "To execute combined arms operations, commanders conceptualize capabilities," and "[when achieved, it] is the total means of destructive, constructive, and information capabilities that a military unit or formation can apply at a given time."[15] The six warfighting functions are a subset of

Maj. Thomas R. Ryan Jr., U.S. Army, serves in a NATO billet as a corps-level staff officer in Istanbul. He holds a BS from the U.S. Military Academy and an MS from the University of Arizona. During his career, he served with 1st Brigade Combat Team, 82nd Airborne Division; 4th Infantry Brigade Combat Team, 4th Infantry Division; and 2nd Stryker Brigade Combat Team, 25th Infantry Division. He also became an assistant professor while teaching systems engineering at the U.S. Military Academy, West Point.

$$f(\text{Combat Power}) = \left(\frac{\text{Intelligence} \times (\text{Fires} + \text{Maneuver} + \text{Protection} + \text{Sustainment})}{\text{Command \& Control}} \right)^{\text{Information}}$$

(Figure by author)

Figure 1. A Mathematical Representation of the Elements of Combat Power

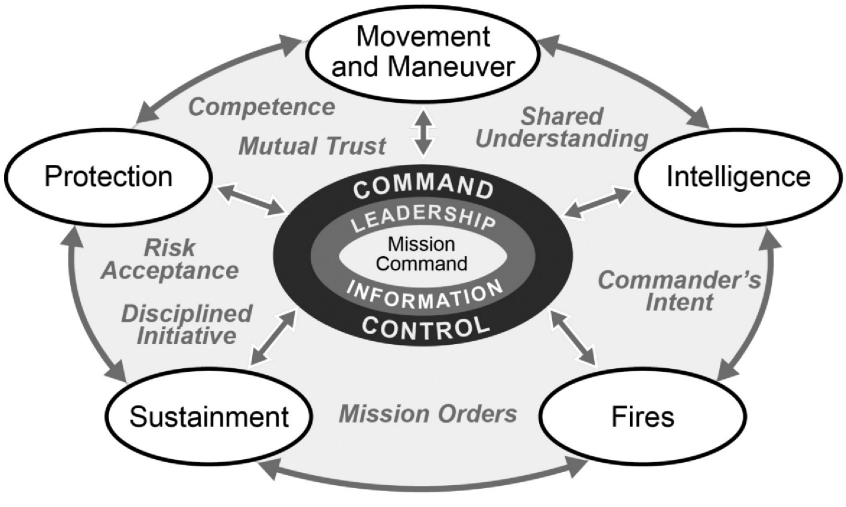
the elements of combat power applied in the physical domain of warfare.[16] Again, these elements are used to ensure plans are exhaustive. Staffs organize in these groupings to plan, and commanders provide guidance along these lines to ensure that they are utilizing every available resource to facilitate mission accomplishment.

We are fascinated using the word "function" and what unique perspectives, possibly insights, it could bring forth by modeling the elements of combat power. Throughout one's Army career, these types of lists are presented in doctrine as time-tested truisms that need to be remembered, studied, and respected because they are relevant even as the face of war changes, because its nature remains relevant.[17] Professor George Box is attributed to saying, "All models are wrong, but some are useful," and his work depicted in figure 1 is one way of representing the relationships between the elements of military combat power.

When teaching undergraduate engineering students to build mathematical models, Murray Teitell and William S. Sullivan conclude, "By finding the simple relationships and laws that govern systems, it leads to innovations, new concepts, and better [understanding]."[18] This portion of the article, in pursuit of those results, will first explain the elements of combat power using U.S. Army doctrine, describe the elements as parameters to define the mathematical system of combat, and highlight some of the insights gained from the model. The next section will present the doctrinal framework of combat power and how it is implemented when preparing for an operation or battle.

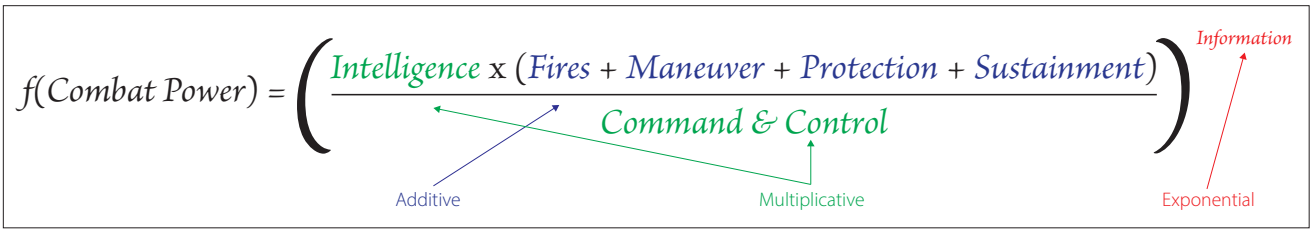
The Army teaches its leaders to think and structure its solutions in a framework that leverages all available combat power. Commanders at every level in the U.S. Army go through a deliberate process to prepare for conflict—it is a mixture of art and science. All levels of command must consider the elements of combat power; however, organizations that have a staff start to align along these elements to help the commander understand, visualize, direct, and decide.

Those elements, depicted in figure 2, are leadership, information, command and control, movement and maneuver, intelligence, fires, sustainment, and protection.[19] The subset of elements known as the warfighting functions are the last six elements listed. Unique to the warfighting functions, compared to the other two elements—leadership and information—is that they are "physical means that tactical commanders use to execute operations and accomplish missions assigned by superior tactical- and operational-level commanders."[20]



(Figure courtesy of Army Doctrine Publication 3-0, *Operations* [2019])

Figure 2. A Visual Systems Diagram of the Elements of Combat Power



(Figure by author)

Figure 3. A Mathematical Representation of the Elements of Combat Power and the Super Relationships of Additive, Multiplicative, and Exponential Parameters

Through the military decision-making process, staffs apply the elements of combat power to deliver mission orders—written documents with visual depictions—that act as a set of instructions to achieve victory, similar to a coach's playbook for any sport.[21] Although over time, the number of elements listed in the U.S. Army's combat power framework has expanded and contracted, the way in which they are presented—in diagrams and word format—remains constant.[22] By modeling the elements of combat power mathematically, the next section will attempt to present a nontraditional perspective, not changing any of their properties, to gain unique insight to how they relate.

Building an Equation

Before showing how each ingredient in this article's mathematical model, or parameters, is defined for combat power, we will first show how math models in general can be organized into some main parameters: additive, multiplicative, and exponential.[23] In figure 3, these parameters interact with each other and the rationale is included that helps explain their role in the overall equation.[24]

According to Barry Boehm and Ricardo Valerdi, a parameter "is additive if it has local effect on the included entity."[25] Additive elements will "measure the functional size of a system."[26] "A factor is multiplicative if it has a global effect across the overall system."[27] If the impact of the size parameter can be doubled, or fractioned, based on the effect of a given parameter, then that parameter is multiplicative.[28] A factor is exponential if it has both a global effect across the system, and an emergent effect for larger systems.[29] If the effect of a given parameter is influential as a function of size because of its impact to maneuver, fires, protection, or sustainment, then it is treated exponentially.

Building the Equation, or the Function (Elements of Combat Power)

To leverage the elements of combat power in a mathematical equation, we must first establish them as parameters that represent the system of warfare. A parameter is defined as "a numerical or other measurable factor forming one of a set that defines a system or sets the conditions of its operation."[30] Parameters are typically leveraged in a system of equations attempting to reduce the complexity of any individual input, or in this case element of combat power, so collectively, the process is better understood and is therefore more applicable.[31] For this article, we will refine the elements of combat power as such and present them sequentially—the output, additive, multiplicative, and exponential.

The Output: Combat Power

The output, combat power, is the left side of the equation. It is the result, or output, of the relationships described below. In concert with how the U.S. Army currently leverages this framework, its result is a holistic consideration of how these elements contribute to mission accomplishment. The aim here is to provide a different perspective, and potentially new insights that will be discussed in a later section.

The Size Factor: Maneuver, Fires, Protection, and Sustainment

These parameters are where scale, size, and scope of an operation generates. What echelon—brigade,

$$f(\text{Combat Power}) = (\text{Maneuver} + \text{Fires} + \text{Protection} + \text{Sustainment})$$

(Figure by author)

Figure 4. The "Physical Elements" Drive the Size and Scope of a Combat Operation

division, corps, army—is the decisive operation? Does it create overmatch with the enemy? The physical elements of combat power—movement and maneuver, fires, protection, and sustainment—are the basis of our understanding of warfare. In this essay, they are described as the physical elements because unlike every other element, these four elements must exist in the physical domain (see figure 4). The physical elements are the most understood, and we can use other models to derive their value if required.[32] Without them, we do not win, but they do not have to be perfect—they must merely be good enough. The analogy is a layup in a basketball game; if the ball goes in, does it matter how ugly the shot really was?

The fact is maneuver and fire are the core of physical combat, and our military trains cognitively and physically to dominate with these factors. Our sustainment enterprise is world class, as demonstrated by our ability to send the immediate response force and its complement of capabilities at home and abroad for no-notice missions multiple times in two years. Finally, our protection capabilities can leverage joint power to respond to any threat. This in no way diminishes their contribution to warfighting. The next section will discuss some of the insights gained by mathematically modeling the doctrine of warfighting.

The Multiplicative Factors: Intelligence and Command and Control

Both intelligence and command and control (C2) impact the system globally, which in simpler terms means that the rest of the organization relies on them to succeed. In this model, we will first discuss intelligence. Then we will focus on C2, present the "law of relative variety" to explain why C2 is used as a "control" to the system, as well as discuss how leadership is most present in the command aspect of this element.

"Information is of greatest value when it contributes to the commander's decision-making process," and therefore without it, the perfect plan is no more than a commander's educated guess on a way to accomplish the mission.[33] Intelligence drives operations and turns planning assumptions into planning facts. To differentiate from the information parameter, the intelligence parameter deals with acquiring priority information requirements about the enemy, friendly forces, and the environment. Therefore, intelligence impacts the system globally, communicating that as this element of combat power goes, so do the rest.

As demonstrated in figure 5, we assume we are unable to gain any intelligence. A theoretical "0" communicates no factual understanding of the situation, and all assumptions, resulting in no intelligence, enable suitable planning. Commanders and staffs can use assumptions, as previously mentioned, to create a rational and logical action; however, this will nullify the physical elements of combat power.

A way to leverage what is known in the intelligence community is predictive analysis.[34] Predictive analysis is not new; however, in the age of MDO, leveraging high performance computing with autonomous programs and artificial intelligence to analyze robust amounts of data is.[35] These new practices are already used in the civilian sector by large entities like Google, Meta (formerly known as Facebook), and Amazon.[36] With the license to practice predictive analysis, one can assume that as the "size driver," intelligence will never actually be "0." If intelligence will always be greater than or less

$$f(\text{Combat Power}) = \text{Intelligence} \times (\text{Physical Elements})$$

(Figure by author)

Figure 5. Intelligence as a Multiplicative Parameter

$$f(\text{Combat Power}) = \frac{\text{Intelligence x (Physical Elements)}}{\text{Command \& Control}}$$

(Figure by author)

Figure 6. Command and Control as a Multiplicative Parameter

than "0," the grouping of physical elements of combat power (fires, movement and maneuver, protection, and sustainment) will always yield some measurable impact—positive if the intelligence is correct, and negative if the intelligence is unknowingly incorrect (e.g., the enemy was able to distort our reality).

Before we move to the second multiplicative element of combat power, C2, we will introduce the law of relative variety, which in its simplest form states that the complexity of a system also establishes the complexity of any controls for that system.[37] Another way to understand this is to think of a bicycle and an airplane as two systems. The controls on a bike match the simplicity of a bike while the cockpit of an airplane is as complex as the type of aircraft used.[38] Viewing C2 through this lens will help explain why we place it under the impact of intelligence toward the physical elements. Next, we will describe why this model aligns leadership toward the "command" portion of C2.

C2 consists of two super variables, command then control. For the purposes of this model, command will also represent the element of leadership as commanders are the leaders of their units. Leadership is very important and can motivate or detract from the morale of a unit.

However, in the case of this model, leadership is an aspect of command. The commander must have the presence, character, and communication to ensure that orders, intent, and purpose saturate and empower their units. Additionally, command will include the U.S. Army's concept of mission command, or the "art" of building the optimal culture for the science of command.

Finally, command will also include the expanded purpose and intent, two separate paragraphs of the operations order that the commander is supposed to write that simplify and articulate what matters. The simpler the better. In this model, leadership will become a component of the C2 parameter.

With respect to control, this variable will represent any human limitation or constraint required to control the operation. An example of these controls could be graphical control measures, symbols and lines typically overlayed on a map to contextually regulate units and capabilities. Other aspects of control are the communications and information systems. The way in which units communicate and share information is wildly complex. Therefore, if a particular operation or battle requires less systems to succeed or the interoperability of the required systems overlap, it is logically better.

The C2 parameter is placed in the denominator because if leveraged under normal conditions, it equals "1," preserving the potential of the other elements (see figure 6). A command-and-control value less than 1 could represent the power of a phenomenal personality or the synergy of a realized interoperability control system that maximizing the kill chain, therefore enhancing the potential of physical elements.[39] If the commander is unclear, the plan too complex, or the number of systems required to operate too robust, then the value of C2 grows larger than "1." If the value of C2 is larger than "1," then full capacity of the other elements is diminished. This is the power of command and control; one must find the comfort to be in command and out of control.[40] Finally, in the essence of John Boyd's "Destruction and Creation" wherein he leverages the second law of thermodynamics and entropy to present that an overcontrolled and closed system will ultimately lead to chaos and die—so becomes the impact of C2 globally as it attempts to synchronize the elements of combat power toward mission success.[41]

The Exponential Factor: Information

The multiplicity in this domain makes the information parameter powerful and is why we suggest making it an exponential parameter. It not only affects the current military system but is also a link to the political and societal systems we operate. Information has water-like properties and can simultaneously exist in multiple states, at multiple levels of warfare, while

$$f(\text{Combat Power}) = (\text{Warfighting Function})^{\text{Information}}$$

(Figure by author)

Figure 7. Information as an Exponential Parameter

concurrently impacting all other elements.[42] To communicate this effect in the mathematical model, it will be used as an exponent for the aggregation of the other elements of combat power—labeled the warfighting functions. The highest level of information exists as an instrument of national power, and in its lowest state, information can be demonstrated by the interaction between a private and their operational environment.[43] Information is also an effect that can be shaped, manufactured, and pre-positioned through the targeting process—deliberate and dynamic themes and messages.

Although the intelligence parameter, discussed earlier, focuses on the process of collecting data and using it to plan, the "information" parameter is how the rest of the world perceives data and therefore how we are able to leverage that activity. NATO seems to understand this already, as it has added more nuance to its combat functions to include an information activity's function.[44]

The information parameter exponentially intensifies the other elements of combat power or neutralizes/minimizes any success they may have (see figure 7). Therefore, it will nominally be set to 1, but if we are able to leverage the power of this parameter it can quickly benefit our forces. Perception is reality, and perception is represented by the information domain. An example is the strategic corporal, as discussed by Maj. Lynda Liddy, who claims the way in which we conduct war may have more external impact than the results of the war we conducted.[45]

Additionally, our current "near-peer" competition affords more latitude in this space for its lower echelons, as well as taking more risk by sponsoring full-fledged disinformation campaigns toward our forces. This is not commentary on our use of the information parameter, but another way to highlight the power it has toward the other elements of combat power, especially as they are leveraged against us.

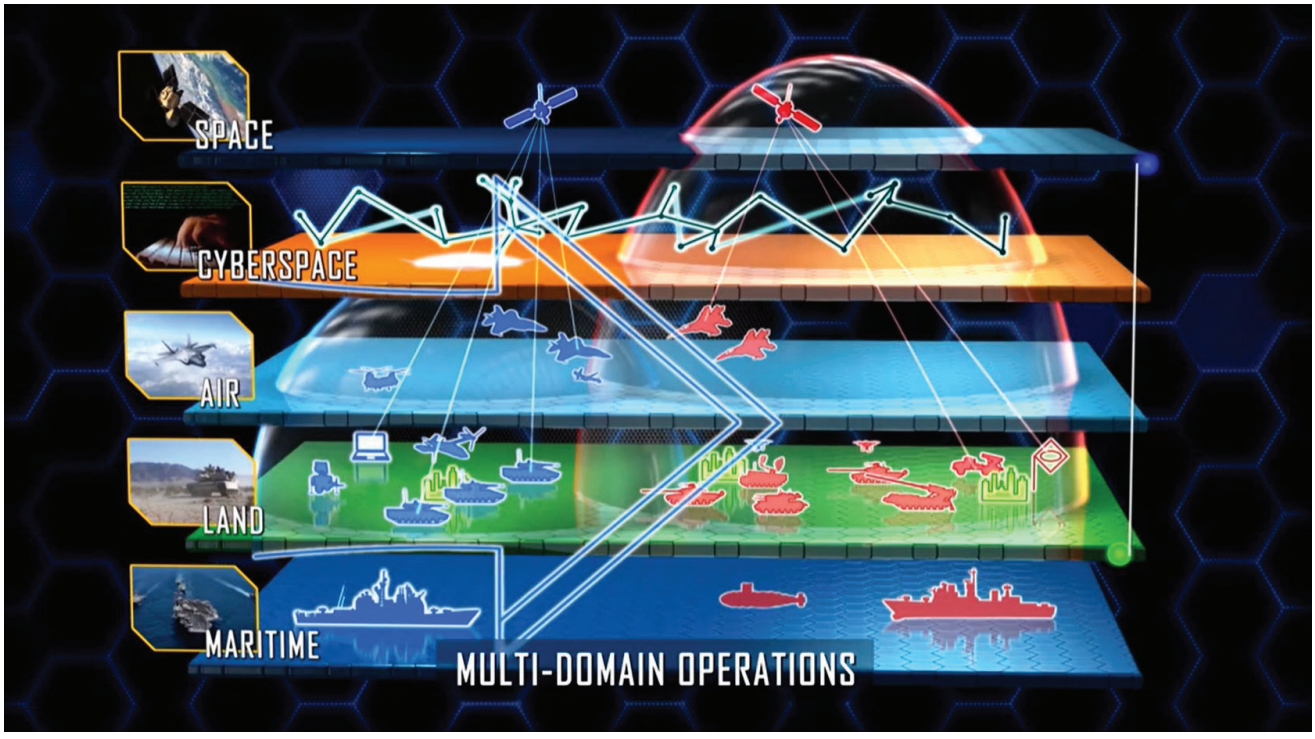
Insights Gained

The exercise of mathematically modeling the U.S. Army elements of combat power has led to many ideas, implications, and opportunities for future considerations. This article will focus on only a few of them, such as its implications toward the MDO framework, the power of the element of information—another recommendation to formally make it a warfighting function for the U.S. Army, and how new models challenge existing perspectives. As the U.S. military pursues MDO, the U.S. Army also seeks better understanding.

Multi-Domain Operations

Using a mathematical model to communicate specific relationships between the elements of combat power directly links to the third tenant of MDO, convergence. Convergence is "the rapid and continuous integration of capabilities in all domains, the EMS, and the information environment that optimizes effects to overmatch the enemy through cross-domain synergy and multiple forms of attack all enabled by mission command and disciplined initiative."[46] U.S. Army Training and Doctrine Command Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028*, mentions variations of "optimization" and "synergy" thirteen and twenty-three times respectively.[47] These terms communicate a mathematical basis. To optimize is to use calculus to find the maximal value or minimal value of the given information.[48] To achieve synergy is to understand that the total sum of the parts, or complete system, is of greater value than the components, or $1 + 1 = 3$.[49]

What is more important is how we will leverage distinct relationships between the elements. In the MDO environment, our nonhuman teammates are artificial intelligence, unmanned systems, and autonomous systems—they speak in "ones" and "zeros." To translate our commanders' intent to our partners, we will have to communicate through code our elements of combat power sooner rather than later. Using a model like the one proposed in figure 1 generates a more comprehensive understanding toward how a commander may want to harness his or her elements of combat power in each situation. These insights will prove paramount when the commander must insert his or her professional military



(Screenshot from *U.S. Army in Multi-Domain Operations 2028* by William Norris, U.S. Army Training Support Command)

judgment because the systems are not making sense due to maligned influence from a bad actor or a staff officer incorrectly implementing a tool.

The information environment seems to be a critical area of emphasis in MDO as it is mentioned seventy times.[50] Again, the use of our nonhuman teammates is mentioned by Gen. James McConville: "The Army also leverages an array of capabilities to operate in the information space and ensure that the nation can consistently win with the truth."[51] Additionally, McConville frames our transition to MDO in these terms:

> The United States Army faces an inflection point that requires innovation, creativity, and entrepreneurship in the application of combat power. Our Nation's adversaries have gained on the Joint Force's qualitative and quantitative advantages. If the Army does not change, it risks losing deterrence and preservation of the Nation's most sacred interests.[52]

It is under these terms that this article transitions to the discussion of information and adds to the decades old plea to include it in the coveted warfighting functions.[53]

Information

The definitions and concepts of doctrine are not as quick to adapt as our adversaries are to find new ways to apply new technologies across multiple domains. The element of information, defined by U.S. Army doctrine, attempts to force three distinct subsets into one: knowledge management, information management, and information themes and messages. After modeling information as a parameter, it seems that the first two are more aligned with the "control" aspect in the C2 function.

The information themes and messages are more aligned with a fires function of effects. It is distinct from fires; however, the targeting process should be leveraged. Additionally, the collateral damage of "information as a weapon" is unlike any other effect as one attempts to modify how people think and feel in a deliberate manner. In the fires function, we have nuclear warheads and cybermunitions that yield high collateral damage; however, they do not attempt to take one's beliefs and modify them for state actions. Therefore, the model places information in an exponential modifier to the physical functions.

There must be a more accurate definition for the element of information so it is not as confusing. Consider relabeling it as the virtual, information

operations, information warfare, or adopt NATO's information activities.[54] The virtual concept was explored by Col. (Ret.) Stefan J. Banach in his discussion with the U.S. Military Academy's Modern War Institute, "Virtual War: Weapons of Mass Deception."[55] The information operations is also of concern to Australia's Maj. Gen. Marcus Thompson, as he presented on the topic in 2018.[56] The implication is that our near-peer competition currently leverages this element with more audacity and in a deliberate manner. This is due to our moral understanding surrounding the implications of misusing this capability and the risk that they are willing to assume. This is demonstrated with the levels authorized to act with autonomy in this element of combat power.

Irrespective of what the U.S. Army labels planning for the effects of "information," the information environment, like the other warfighting functions, needs to be deliberately and distinctly considered in planning. As stated by a U.S. Marine Corps officer, "The placement of information on a higher plane in the hierarchy of warfare will require a paradigm shift in how the U.S. plans, prepares, and conducts war."[57] This paradigm shift is required to properly prepare for the current operating environment, as Russian forces plan to stage a fake attack to justify their aims, and for the supposed information environment of 2040.[58] Again, the purpose of the warfighting functions is to ensure that commanders and staffs integrate and synchronize their combat power to accomplish the missions assigned.

Perspective—The Power of Seeing the Something Familiar in a Unique Way

Here are some reasons why thought experiments like this can lead to deeper understanding, even if math is an obstacle. Wicked problems arise when there is a mismatch between people's mental models.[59] The U.S. Army does a lot to alleviate this in its orders process by requiring a written version, pictures that also communicate the plan (concept sketches and terrain models), a briefing, and some level of rehearsal. These deliverables, or products, also align with the educational acronym VARK, or visual (sketches and terrain models), audible (the briefing), reading (the written order), and kinesthetic (the rehearsals).[60]

When building or interacting with a mathematical model, the audience expands to a different form of language, a different perspective. Math is called the universal language for a reason, and even those who are not mathematically inclined can still get stimulus from having a conversation about the relationships between the parameters. For instance, when presenting this model to my NATO colleagues, a wise Dutch lieutenant colonel quipped, "I do not remember math like this; but it is clear that placing the functions in this way will generate new ways of thinking."

The point is, just sharing this idea with other staff officers sparked a few hours of discourse and deeper understanding of how the elements relate. Imagine what other aspects of military dogma could be explored if we were to model them mathematically, or in other ways not traditionally used.

Conclusion

Modeling anything with a math equation communicates a very quantitative discussion that invokes the anti-McNamara crowd to gain a louder voice than necessary, "because of [McNamara's] role in [quantifying outcomes during the Vietnam War], he tends to be caricatured as smart but not wise, obsessed with narrow quantitative measures but lacking in human understanding."[61] However, this is an oversimplified stereotype of numerical analysis. Numbers only tell half the story, and that is why the Army's Functional Area 49 is both operations research and systems analysis. The systems analysis should add the qualitative synthesis to any numerical estimate—see Mr. Box's quote at the beginning. The fact is this bias is real and could be a true detractor to any further attempts to mathematically model such a complex set of parameters like the U.S. Army's elements of combat power. Even as the battlefields become a stark comparison from the days of Antoine-Henri Jomini and Carl von Clausewitz, our quest to leverage their insights remain steadfast: "The Army will leverage emerging capabilities and forward posture to expand the battle space by maneuvering in areas 'inside' and 'outside' the traditional theater geometry."[62]

This article is not about making a new relative combat power number generator (i.e., correlation of forces calculator) or suggesting that we can reduce warfare to

a simple formula. It simply recommends "information" be moved into the coveted category of warfighting function to enable the tenets of MDO (calibrated force posture, multi-domain formations, and convergence), and it demonstrates how visualizing a mathematical relationship between the elements of combat power could help facilitate implementation into our future partners—artificial intelligence, unmanned systems, and autonomous systems. We as a profession need to embrace different perspectives of historical truths—especially if we want to remain on the cutting edge of competition deterring conflict. ■

Notes

1. Christopher Mewett, "Understanding War's Enduring Nature Alongside its Changing Character," War on the Rocks, 21 January 2014, accessed 31 March 2022, https://warontherocks.com/2014/01/understanding-wars-enduring-nature-alongside-its-changing-character/.

2. Will Spears, "A Sailor's Take on Multi-Domain Operations," War on the Rocks, 21 May 2019, accessed 31 March 2022, https://warontherocks.com/2019/05/a-sailors-take-on-multi-domain-operations/.

3. Ibid., John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973-1982* (Fort Monroe, VA: U.S. Army Training and Doctrine Command [TRADOC], June 1984), accessed 31 March 2022, https://www.tradoc.army.mil/wp-content/uploads/2020/10/From-Active-Defense-to-AirLand-Battle.pdf.

4. Jack Watling and Daniel Roper, "European Allies in US Multi-Domain Operations," RUSI Occasional Paper (London: Royal United Services Institute [RUSI] for Defence and Security Studies, 23 September 2019), v, accessed 31 March 2022, https://rusi.org/explore-our-research/publications/occasional-papers/european-allies-us-multi-domain-operations.

5. Ibid.

6. TRADOC Pamphlet (TP) 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Fort Eustis, VA: TRADOC, 6 December 2018), vii, accessed 31 March 2022, https://adminpubs.tradoc.army.mil/pamphlets/TP525-3-1.pdf.

7. Ibid.

8. Ibid.

9. Army Doctrine Publication (ADP) 3-0, *Operations* (Washington, DC: U.S. Government Publishing Office [GPO], 31 July 2019), 5-2, accessed 31 March 2022, https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1007357.

10. Derek Cabrera and Laura Cabrera, *Systems Thinking Made Simple: New Hope for Solving Wicked Problems* (New York: Plectica, 2015).

11. American Psychological Association Dictionary of Psychology Online, s.v. "anchoring bias," accessed 16 May 2022, https://dictionary.apa.org/anchoring-bias. Anchoring bias is defined as "the tendency, in forming perceptions or making quantitative judgments under conditions of uncertainty, to give excessive weight to the starting value (or anchor), based on the first received information or one's initial judgment, and not to modify this anchor sufficiently in light of later information."

12. Cabrera and Cabrera, *Systems Thinking Made Simple*.

13. T. M. Huber, "Jomini" (unpublished manuscript, 1995); Ricardo Valerdi, *The Constructive Systems Engineering Cost Model (COSYSMO): Quantifying the Costs of Systems Engineering Effort in Complex Systems* (Saarbrucken, DE: VDM Verlag, 2008).

14. Arnel P. David, Sean A. Acosta, and Nicholas Krohley, "Getting Competition Wrong: The US Military's Looming Failure," Modern War Institute at West Point, 3 December 2021, accessed 31 March 2022, https://mwi.usma.edu/getting-competition-wrong-the-us-militarys-looming-failure/.

15. ADP 3-0, *Operations*, 5-1. Figure 1 is from George Box and Norman R. Draper, *Empirical Model-Building and Response Surfaces* (Oxford: John Wiley & Sons, 1987).

16. Ibid., 5-2.

17. Other lists are principles of war, forms of contact, mechanism of defeat and stability, characteristics of the offense and defense, fundamentals of reconnaissance, and others.

18. Murray Teitell and William S. Sullivan, "Deriving Original Systems of Equations as an Assignment in Engineering and Technology Courses" (paper presentation, 2011 ASEE Annual Conference and Exposition, Vancouver, 26 June 2011), accessed 31 March 2022, https://peer.asee.org/17703.

19. ADP 3-0, *Operations*, fig. 5-1.

20. Ibid., 5-2.

21. ADP 5-0, *The Operations Process* (Washington, DC: U.S. Government Printing Office, 2011), 1-15, accessed 31 March 2022, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN18126-ADP_5-0-000-WEB-3.pdf.

22. Shawn Woodford, "How Does the U.S. Army Calculate Combat Power?," *Mystics and Statistics* (blog), Dupuy Institute, 7 December 2017, accessed 31 March 2022, http://www.dupuyinstitute.org/blog/2017/12/07/how-does-the-u-s-army-calculate-combat-power-%C2%AF_%E3%83%84_-%C2%AF/; David A. Fastabend, *Fighting by the Numbers: The Role of Quantification in Tactical Decision Making* (Fort Leavenworth, KS: School of Advanced Military Studies, 1 December 1987), accessed 31 March 2022, https://apps.dtic.mil/sti/citations/ADA191438; George J. Franz, *Information—The Fifth Element of Combat Power* (Fort Leavenworth, KS: School of Advanced Military Studies, 1 May 1996), accessed 31 March 2022, https://apps.dtic.mil/sti/pdfs/ADA314297.pdf.

23. Valerdi, *The Constructive Systems Engineering Cost Model*.

24. Ibid., 29. Used equation 1 as a framework for figure 3.

25. Ibid.

26. Ibid.

27. Ibid.

28. Ibid.

29. Ibid.

30. Lexico U.S. Dictionary, s.v. "parameter," accessed 31 May 2022, https://www.lexico.com/en/definition/parameter.

31. Teitell and Sullivan, "Deriving Original Systems of Equations."

32. Army Techniques Publication 5-0.3, *Operation Assessment: Multi-Service Tactics, Techniques, and Procedures for Operation Assessment* (MCRP 5-10.1, NTTP 5-01.3, AFTTP 3-2.87) (Washington, DC: U.S. GPO, February 2020), accessed 31 March 2022,

https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN20851_ATP_5-0x3_FINAL_WEB.pdf.

33. Joint Publication 2-0, *Joint Intelligence* (Washington, DC: U.S. GPO, October 2013), ix, accessed 31 March 2022, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp2_0.pdf.

34. Ibid., II-10.

35. TP 525-3-1, *The U.S. Army in Multi-Domain Operations 2028*.

36. Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (New York: PublicAffairs, 2019).

37. W. Ross Ashby, "Requisite Variety and Its Implications for the Control of Complex Systems," in *Facets of Systems Science*, ed. George J. Klir, vol. 7 of *International Series on Systems Science and Engineering* (London: Springer Nature, 1991), 405–17, https://doi.org/10.1007/978-1-4899-0718-9_28.

38. Dr. Ricardo Valerdi, in discussion with the author, 8 February 2022.

39. Christian Brose, *The Kill Chain: Defending America in the Future of High-Tech Warfare* (New York: Hachette Books, 2019). A kill chain is a framework that encompasses the targeting process and enabling effects to reach intended targets more deliberately and faster.

40. Patrick Work, "Their Leadership and Ownership: Concepts for Warfare By, With and Through," *Infantry* 107, no. 1 (January-March 2018): 21–35, accessed 31 March 2022, https://www.benning.army.mil/infantry/magazine/issues/2018/JAN-MAR/PDF/1)Work-OIR.pdf.

41. John R. Boyd, "Destruction and Creation," 3 September 1976, accessed 31 March 2022, https://www.oodaloop.com/wp-content/uploads/2016/06/DESTRUCTION_AND_CREATION.pdf.

42. JP 3-0, *Joint Operations*. The levels of war are defined as strategic, operational, and tactical. For the purpose of this essay, the tactical level is the main focus, but the information space implications are not bound by where the operation or battle is literally occurring.

43. ADP 3-0, *Operations*. The instruments of national power, or DIME construct, are diplomacy, informational, military, and economic. These instruments present different vectors of leverage within the international paradigm;

44. Allied Procedural Publication (APP) 28, *Tactical Planning for Land Forces* (Brussels: NATO Standardization Office, November 2019), accessed 4 April 2022, https://www.forsvarsmakten.se/siteassets/english/swedint/engelska/swedint/information-to-admitted-students-and-participants/nltpc/app-28-eda-v1-e.pdf.

45. Lynda Liddy, "The Strategic Corporal: Some Requirements in Training and Education," *The Australian Army Journal* 2, no. 2 (2005): 139, accessed 31 March 2022, https://researchcentre.army.gov.au/sites/default/files/aaj_2005_2.pdf. A strategic corporal is a soldier that possesses technical mastery in the skill of arms while aware that his judgment, decision-making, and action can all have strategic and political consequences that can affect the outcome of a given mission and the reputation of his country.

46. TP 525-3-1, *The U.S. Army in Multi-Domain Operations 2028*, vii.

47. Ibid.

48. "Maxima, Minima, and Saddle Points," Khan Academy, accessed 31 March 2022, https://www.khanacademy.org/math/multivariable-calculus/applications-of-multivariable-derivatives/optimizing-multivariable-functions/a/maximums-minimums-and-saddle-points.

49. Mark Burgin and Gunter Meissner, "1 + 1 = 3: Synergy Arithmetic in Economics," *Applied Mathematics* 8, no. 2 (February 2017): 133–44, https://doi.org/10.4236/am.2017.82011.

50. TP 525-3-1, *The U.S. Army in Multi-Domain Operations 2028*.

51. James McConville, *Army Multi-Domain Transformation: Ready to Win in Competition and Conflict*, Chief of Staff Paper #1 (Washington, DC: Headquarters, Department of the Army, 16 March 2021), accessed 31 March 2022, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN32547-SD_01_CSA_PAPER-01-000-WEB-1.pdf.

52. Ibid.

53. Franz, *Information—The Fifth Element of Combat Power*; Gregory M. Tomlin, "The Case for an Information Warfighting Function," *Military Review* 101, no. 5 (September-October 2021): 89–99, accessed 31 March 2022, https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/September-October-2021/Tomlin-Info-Warfighting-Function/; Charles M. Kelly, "Information on the Twenty-First Century Battlefield: Proposing the Army's Seventh Warfighting Function," *Military Review* 100, no. 1 (January-February 2020): 62–68, accessed 31 March 2022, https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/January-February-2020/Kelly-Info-warfighting/.

54. APP-28, *Tactical Planning for Land Forces*; Work, "Their Leadership and Ownership."

55. Stefan J. Banach, "Virtual War and Weapons of Mass Deception," Modern War Institute at West Point, accessed 31 March 2022, https://mwi.usma.edu/virtual-war-weapons-mass-deception/.

56. M. M. Thompson, "Information Warfare—A New Age?" (speech, iWar Five Eyes Principals Forum, Canberra, Australia 15 November 2018).

57. Nick Brunetti-Lihach, "Information Warfare Past, Present, and Future," The Strategy Bridge, 18 November 2018, accessed 31 March 2022, https://thestrategybridge.org/the-bridge/2018/11/14/information-warfare-past-present-and-future.

58. Tara Copp, "Russia Considering Fake Video with 'Corpses' as Pretext for Ukrainian Invasion, Pentagon Says," Defense One, 3 February 2022, accessed 31 March 2022 https://www.defenseone.com/threats/2022/02/russia-considering-fake-video-corpses-pretext-ukrainian-invasion-pentagon-says/361573/.

59. Cabrera and Cabrera, *Systems Thinking Made Simple*.

60. Neil D. Fleming and Colleen Mills, "Not Another Inventory, Rather a Catalyst for Reflection," *To Improve the Academy* 11, no. 1 (1992): 137, https://doi.org/10.1002/j.2334-4822.1992.tb00213.x.

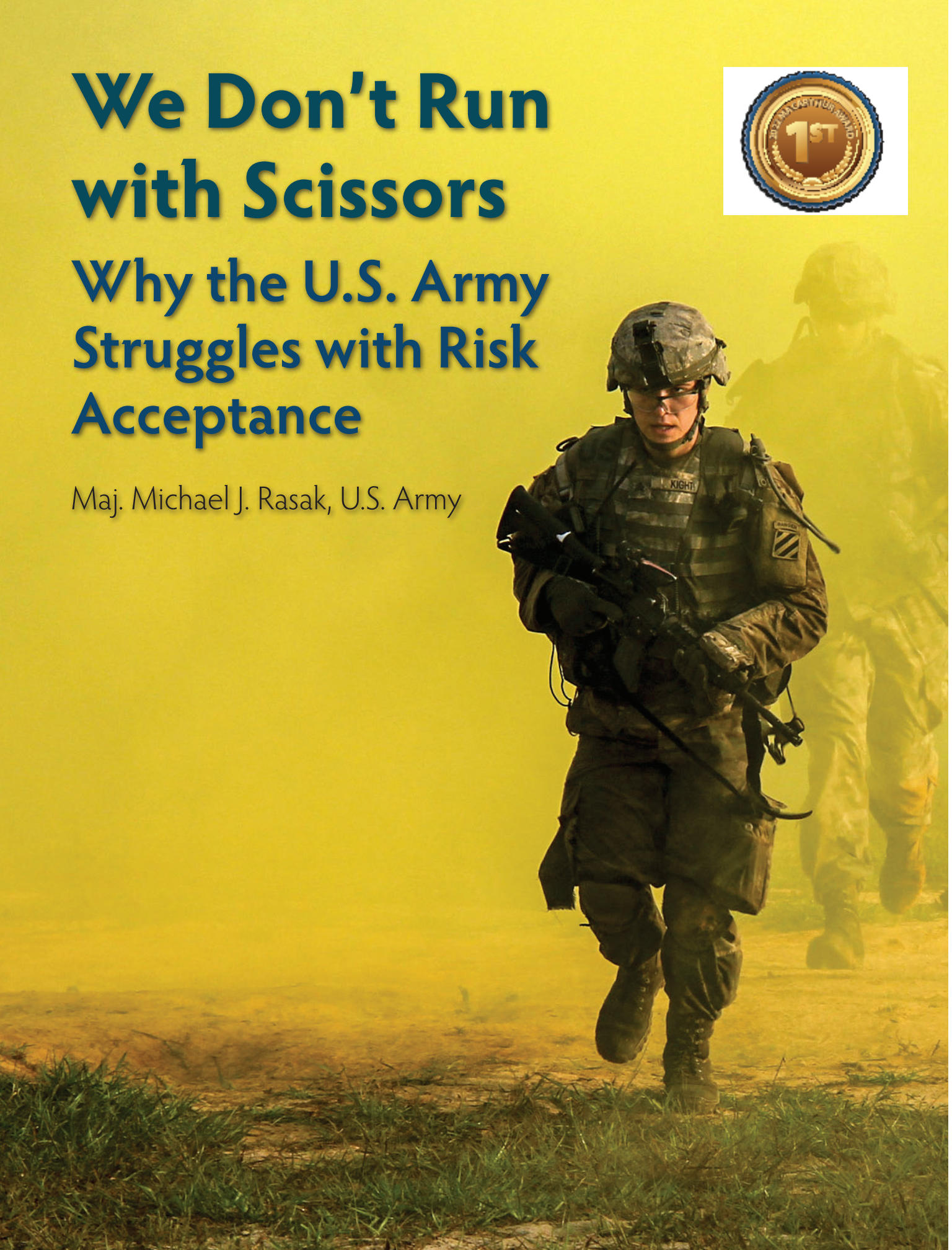
61. Phil Rosenzweig, "Robert S. McNamara and the Evolution of Modern Management," *Harvard Business Review*, December 2010, accessed 31 March 2022, https://hbr.org/2010/12/robert-s-mcnamara-and-the-evolution-of-modern-management.

62. McConville, *Army Multi-Domain Transformation*.

We Don't Run with Scissors

Why the U.S. Army Struggles with Risk Acceptance

Maj. Michael J. Rasak, U.S. Army



In 1952, retired British Field Marshal Sir William Slim delivered a forty-five-minute address on aspects of "Higher Command" to the students of the U.S. Army Command and General Staff College. Toward the end of his speech, Slim impressed upon his audience an important concept: if a subordinate suffers from a setback borne from his own carelessness, stupidity, or cowardice, then his commander should fire him. "But," Slim continued, "if he did it because he was a little bit overeager, because he took just a little bit too much risk, or because he was a little bit too pugnacious, give him another chance."[1] Though profound, Slim's advice in fact echoes the words of military thinkers dating back two millennia. In the first century AD, Greek philosopher Onasander recognized the battlefield value of subordinate initiative and urged prospective commanders to allow their soldiers to take high payoff risks.[2] Three centuries later, Vegetius Renatus observed that while fear and punishment helped instill camp discipline, hope and rewards more effectively fostered aggressive soldierly behavior.[3] In other words, military leaders should be slow to punish and quick to reward audacity and boldness of action. Unfortunately, a combination of institutional mechanisms and internal cultural forces hinders subordinate initiative in the U.S. Army. Instead of encouraging audacity of action, the U.S. Army encourages cautiousness and conformity, ultimately undermining the development of the exact sort of bold leaders it wishes to produce.

If nothing else, what Slim, Onasander, and Vegetius have in common is a firm belief in the benefits accrued from applying the doctrinal principle of risk acceptance.[4] This principle contains several aspects including resource allocation, time management, and cost analysis, but most importantly, trust. To promote disciplined initiative, a level of trust must exist between commander and subordinate—that the commander will accept his or her subordinate's risk-taking and will demonstrate that trust by underwriting any honest mistakes produced as an outcome.[5] Theoretically, this process not only encourages decentralized execution but also fosters the development of bold, intelligent, and innovative leaders—leaders who are able and willing to aggressively exploit fleeting opportunities in sometimes unique and imaginative ways.

Though the U.S. Army codifies the intellectual underpinnings of risk acceptance into its doctrine, the principle is conspicuously absent in practice. Evidence of this point is visible in annual leadership surveys, combat training center (CTC) lessons learned, and various Army leaders' published observations. These sources suggest a large portion of officers and noncommissioned officers (NCOs) simply do not possess the level of trust they need to feel comfortable exercising disciplined initiative as prescribed by Army Doctrine Publication 6-0, *Mission Command: Command and Control of Army Forces*, or as exhorted by senior leaders like Gen. Stephen Townsend.[6] Two interconnected causes likely contribute to this phenomenon: (1) there currently exists no significant incentives for leaders to execute operations in a bold, innovative manner during training; and (2) Army culture discourages (if not outright punishes) such an approach. As such, it seems the calculus many leaders make when determining the cost-benefit analysis associated with risk taking often leads them to pursue courses of action that can only be described as conventional, prosaic, or just good enough to not get fired.

By design, CTCs like the National Training Center or the Joint Readiness Training Center serve as the premier locations for Army leaders to experiment and practice such risk-taking. CTCs offer commanders the rare opportunity to assemble their entire organization in a single space to execute operations in a dynamic, realistic training environment against a free-thinking and highly capable opposing force. Leaders are assigned objectives, tasks, and resources, and they are given an opportunity to put into practice their craft under the gaze of observer-controller/trainers, superiors, peers, and subordinates. This process typically occurs just once a year. If combat operations are not on the horizon, leaders have just one opportunity to impress evaluators with their ability to apply years of experience, training, and education; one opportunity to secure a "Most Qualified" annual evaluation. The stakes are without

Previous page: Georgia National Guardsmen rush to their objective during a live-fire exercise 12 May 2018 at the Joint Readiness Training Center, Fort Polk, Louisiana. By design, combat training centers serve as the premier locations for Army leaders to experiment and practice risk taking. (Photo from JRTC Operations Group Public Affairs Office)

question incredibly high. And they are higher still if one considers these exercises are usually the most significantly weighted events during an officer's time in a key developmental assignment, and that most officers are highly cognizant that they require at least three "Most Qualified" evaluations over a five-year span to secure their promotion to the next rank.[7] Understanding this, one can see why leaders might be hesitant to deviate too far from standard convention—why they might avoid devising the "bold," "innovative," or "creative" schemes that CTCs are uniquely designed to facilitate.

Some may be skeptical of the notion that a leader's performance during a ten-day CTC exercise disproportionately influences the outcome of an evaluation that should ostensibly reflect his or her performance over an entire year, but evidence indicates this indeed occurs. A study conducted by Lee A. Evans and G. Lee Robinson reveals raters and senior raters, like all humans, rely on cognitive biases like the "halo effect" or "duration neglect" to simplify the complex task of writing a comprehensive evaluation that encompasses twelve months' worth of interactions, decisions, and actions.[8] Both of these biases lead evaluators to excessively fixate on a single aspect of the ratee's character or performance during this period. Given the significant and lengthy process of preparing for and executing a CTC rotation, how could unit leaders not become unwittingly wed to their impressions built there when it comes time to put pen to evaluation paper? Moreover, it is precisely because CTC exercises shed light on how subordinates will perform in actual combat that they carry so much weight.

DELIBERATE RISK ASSESSMENT WORKSHEET

1. MISSION/TASK DESCRIPTION			2. DATE (DD/MM/YYYY)
Troop Formation (Running Route)			25/09/2019
3. PREPARED BY			
a. Name (Last, First, Middle Initial)	b. Rank/Grade	c. Duty Title/Position	
Lawrence, Timothy, D.	GS-13	Director	
d. Unit	e. Work Email	f. Telephone (DSN/Commercial (Include Area Code))	
USAG Fort Lee, VA., Safety	timothy.d.lawrence.civ@mail.mil	539/765-3132	
g. UIC/CIN (as required)	h. Training Support/Lesson Plan or OPORD (as required)	i. Signature of Preparer	
W6CPAA		LAWRENCE.TIMOTHY.D.1228488310 Digitally signed by LAWRENCE.TIMOTHY.D.1228488310 Date: 2019.09.26 08:27:53 -04'00'	

Five steps of Risk Management: (1) Identify the hazards (2) Assess the hazards (3) Develop controls & make decisions (4) Implement controls (5) Supervise and evaluate *(Step numbers not equal to numbered items on form)*

4. SUBTASK/SUBSTEP OF MISSION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
PT Testing and Daily 4 mile runs troop formation	Vehicular/Pedestrian accident	H	-Closed and joint (running/vehicular) routes -Barriers/cones/signs/Road Guards -Publicize PT Maps/Policy	How: Unit Policy/Media channels/signage Who: Leaders, DPW, MP Presence/Safety	M
	Roadway conditions Potholes, ice, and snow	M	-Ensure roads are maintained -Evaluate risks -Develop Unit Policy and unsafe road conditions procedures	How: Internal unit running policy/DPW Who: Leader, DPW (Roads and Grounds)	L
	Weather Conditions (Fog, Heat, Cold)	M	-Develop Unit Policy -Assess conditions, Develop controls and supervise/evaluate conditions	How: Unit Policy/Risk Mgt. Worksheet Who: Leader	L
				How: Who:	
				How: Who:	

Additional entries for items 5 through 9 are provided on page 2.

10. OVERALL RESIDUAL RISK LEVEL *(All controls implemented)*: ☐ EXTREMELY HIGH ☐ HIGH ☒ MEDIUM ☐ LOW

11. OVERALL SUPERVISION PLAN AND RECOMMENDED COURSE OF ACTION

At a minimum, barriers/warning signs will be placed at the following intersections: B Avenue at 38 Street, B Avenue at Mahone Avenue, B Avenue at Lee Avenue, B Avenue at 16th Street, B Avenue (North) at Sisisky Boulevard, Shop Road at 19th Street, and Shop Road at 11th Street.

12. APPROVAL OR DISAPPROVAL OF MISSION OR TASK ☒ APPROVE ☐ DISAPPROVE

a. Name (Last, First, Middle Initial)	b. Rank/Grade	c. Duty Title/Position	d. Signature of Approval Authority
Martin, Hollie, J.	O6	Garrison Commander	Hollie J Martin

e. Additional Guidance:

ENCLOSURE 2

A sample page of a DD Form 2977, *Deliberate Risk Assessment Worksheet*. The author contends that Army leaders tend to be risk averse, although tools like this help mitigate risk during military operations. (Image from Fort Lee Policy 20-7, *Troop Movements and PT [Running Routes]*)

Others may be skeptical of the idea that many Army leaders would allow careerism to influence their decision-making in training or combat. However, this notion not only appears overly optimistic but contradicts a significant volume of data suggesting otherwise. To begin with, Leonard Wong and Stephen J. Gerras's landmark study *Lying to Ourselves: Dishonesty in the Army Profession* explicitly cites careerism as a force contributing to leaders' willingness to "lie, cheat, or steal for self-advancement."[9] The Army's "up-or-out" policy and leaders' anxiety surrounding job security becomes even more apparent when one takes into account that most leaders envision staying in the Army for a full twenty-year career. Over 90 percent of field grade officers, 62 percent of company grade officers, and 85 percent of

NCOs report this to be the case, according to the *2016 Center for Army Leadership Annual Survey of Army Leadership (CASAL)*.[10] This would suggest, then, that most leaders have made life arrangements centered on their careers in the Army, often at the expense of their spouse's career or children's educational opportunities. Moreover, a recent RAND study indicates 46 percent of all soldiers entering the force do so for strictly occupational benefits such as a stable paycheck, health-care benefits, and presumably the prospect of receiving a lifelong pension. Conversely, only 9 percent join exclusively for institutional reasons (e.g., patriotism, call to serve, family history).[11] Coupling the datasets above reveals an institution saturated with individuals and leaders, for better or worse, glued to the financial underpinnings of their career. While it may be impossible to determine the exact percentage of leaders who allow job security to affect their willingness to pursue bold or creative plans, a very conservative estimate may sit at around 35 percent, though a much higher number is perhaps more likely.[12]

These considerations raise the following question: What incentives do leaders have to be bold, innovative, or creative? At best, a leader could receive recognition and high marks for excellent performance. At worst, this same leader could be fired, be labeled inept, and could struggle to rehabilitate his or her professional reputation. Phrased a different way, the choice to be bold or innovative has a potentially career-ending outcome. Conversely, if a leader sticks to routine convention and executes the minimum tasks outlined by doctrine or higher headquarters' orders, then he or she has a good chance of succeeding and simply riding a wave of safety to promotion. It is a fact that at each rank leading up to lieutenant colonel (the rank most officers must attain to retire) virtually every branch has a promotion rate of over 50 percent.[13] Thus, if leaders can simply avoid drawing negative attention to themselves during one of the most important events of their rating period, the law of averages suggest they can attain their goal of retirement—with no bold or aggressive risks required.

Even if particularly motivated leaders are free from self-imposed careerist predilections, evidence indicates there is a distinct likelihood they will find themselves serving in a unit where supervisor risk acceptance is generally unfavorable or outright absent. In the 2016 *CASAL* report, only 66 percent of leaders from sergeant to captain felt unit members were "allowed and encouraged to learn from honest mistakes."[14] Revealingly, this trend is worse for individuals assigned to table of organization and equipment (TO&E) units rather than Table of Distribution and Allowances (TDA) units—indicating it is precisely those operating units that train for and deploy to combat that suffer greatest from risk-averse leadership.[15] While 71 percent of company grade officers in TDA assignments feel unit members are "empowered to make decisions pertaining to their duties," only 63 percent of officers assigned to a TO&E unit feel the same. For NCOs in TO&E assignments, the level of distrust is significantly worse: only 57 precent feel encouraged to learn from honest mistakes, and 54 percent feel empowered to make decisions pertaining to their duties. Lastly, and most compellingly, only 52 percent of *all* leaders surveyed—from sergeant to colonel—felt their immediate supervisors "fostered a climate for development (e.g., allowed

“Even if particularly motivated leaders are free from self-imposed careerist predilections, evidence indicates there is a distinct likelihood they will find themselves serving in a unit where supervisor risk acceptance is generally unfavorable or outright absent.”

Maj. Michael J. Rasak, U.S. Army, is an Art of War Scholar at the Command and General Staff College. He holds a BA from Michigan State University and is pursuing a postgraduate degree in history from Western Kentucky University. His assignments include two combat deployments to Afghanistan, one as an infantry platoon leader and another as a squadron intelligence officer.

Arkansas Army National Guard soldiers with the 1036th Engineer Company from Jonesboro, Arkansas, detonate an M58 Mine Clearing Line Charge 16 August 2015 at the National Training Center, Fort Irwin, California. Combat training center lessons learned indicate risk acceptance is conspicuously absent during training. (Photo by Maj. W. Chris Clyne, 115th Mobile Public Affairs Detachment)

learning from honest mistakes)."[16] Thus, a reasonable estimate of the percentage of leaders who find themselves serving under a risk-averse supervisor who discourages their learning from mistakes may sit at approximately 45 percent.

Synthesizing the data above yields noteworthy results. If 35 percent of all leaders are instinctively opposed to pursuing "bold" actions for careerist reasons, and 45 percent of all leaders find themselves serving under a risk-averse commander, then the percentage of leaders possessing *both* the internal willingness and external support to take risks can range anywhere from 20 percent to 55 percent, with a mean of 37.5 percent.[17] In a simulation conducted by the author using a random sample of five hundred hypothetical leaders, only 31.4 percent possessed both characteristics.[18] Of course, this number could fluctuate up or down depending on the distribution of risk-takers to risk-tolerant units. Nonetheless, it seems on average only one-third of officers heading to CTCs are able to buy what Townsend is selling, that "it's okay to run with scissors."

This minority of officers, however, do have other considerations in mind that further diminish any opportunity to run with scissors—namely, a seemingly institution-wide reluctance to privilege innovation, creativity, and outside-of-the-box thinking at the tactical and operational levels. A 2019 CTC trend report from the U.S. Army Combined Arms Center indicates commanders consistently stymie staff initiative and analysis by immediately directing a single course of action (COA) at the start of the planning process.[19] As time efficient as this may be, the habitual use of command-directed COAs can ultimately detract from a climate of free-thinking, brainstorming, red-teaming, or other creative or collaborative planning processes. Instead, directed COAs foster these processes' antithesis: groupthink and a mindless obedience to higher direction. A Harvard study conducted by Sayce Falk and Sasha Rogers reveals such a pattern. According to

their research, nearly half of junior officers who leave the military report doing so because they feel it does "a poor job at identifying and rewarding traits such as creativity, as opposed to qualities such as endurance or ability to follow orders."[20] Moreover, of all the Army leadership attributes, soldiers consistently rate "innovation" as the lowest one demonstrated by their immediate supervisor.[21]

Army leaders' historic tendency to issue overly prescriptive mission orders likewise reveals an institution inundated with officers unwilling to deviate from a strict adherence to doctrinal outputs or evaluation requirements. This fact is evident in numerous observations recorded by CTCs, the Army's Mission Command Training Program, and the Combined Arms Doctrine Directorate.[22] These entities posit that units habitually generate overly detailed orders containing enormous volumes of information that are nearly impossible for subordinate commands to receive, digest, and act upon in a timely manner. Units can expect a single order to contain dozens of products serving both regulatory and informational purposes, to include overlays, templates, matrices, checklists, graphics, annexes, appendices, maps, and intelligence updates. Such a massive directive—containing countless tasks, requirements, and timelines buried beneath tombs of data—undermines any perception of subordinate autonomy or freedom of action.[23] Worse, leaders often find themselves delivering or receiving these orders through inefficient or redundant means; one Joint Readiness Training Center participant noted his requirement to convert his lower-echelon analog products into digital ones so that his higher headquarters could have visibility on his units' operations.[24]

Considering the above, it is little wonder why the Army has a risk acceptance problem. Roughly one-third of officers are unwilling to jeopardize their financial security by pursuing potentially career-ending acts of audacity or creativity; another one-third are situated in units where direct supervisors are unwilling to tolerate such risk taking; and the remaining one-third are operating in an institution that generally privileges tight, hierarchical control over subordinate autonomy. As hard as they may try, Army senior leaders are unlikely to change this trend through simple exhortations on the importance of mission command. Instead, to affect genuine change, their words must alter how the Army evaluates its leaders. Until boldness, creativity, and aggressiveness are properly incentivized, officers and NCOs will continue to play it safe at places like the National Training Center. And this is unfortunate, as many of humanity's greatest military thinkers, doctrinal innovators, and combat leaders blossom from years of fearless experimentation and unconventional thinking. As Gen. Omar Bradley once observed, "Judgement comes from experience and experience comes from bad judgement."[25] ■

Notes

1. Sir William Slim, "Higher Command in War," *Military Review* 70, no. 5 (May 1990): 20.

2. Onasander, *Strategikos* [The general], trans. Illinois Greek Club (Harvard, MA: Loeb Classical Library, 1923), 32.3.

3. Vegetius, *Epitome of Military Science*, trans. N. P. Milner (Liverpool, UK: Liverpool University Press, 2001), 3.26.

4. Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces* (Washington, DC: U.S. Government Publishing Office [GPO], 2019), 1-13.

5. Ibid., 2-17.

6. Stephen Townsend, Douglass Crissman, and Kelly McCoy, "Reinvigorating the Army's Approach to Mission Command: It's Okay to Run with Scissors, Part 1," *Military Review* 99, no. 3 (May-June 2019): 4–9, accessed 25 March 2022, https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/May-June-2019/Townsend-Mission-Command/.

7. For example, see "Infantry Branch FY22 LTC PSB Analysis and Key Points," U.S. Army Human Resources Command, 8 March 2022, accessed on 27 March 2022, https://www.hrc.army.mil/content/ACTIVE%20OFFICER%20SELECTION%20BOARDS (CAC required).

8. Lee A. Evans and G. Lee Robinson, "Evaluating Our Evaluations: Recognizing and Countering Performance Evaluation Pitfalls," *Military Review* 100, no. 1 (January-February 2020): 97–98.

9. Leonard Wong and Stephen J. Gerras, *Lying to Ourselves: Dishonesty in the Army Profession* (Carlisle, PA: U.S. Army War College Press, 2015), 26–27, accessed 21 March 2022, https://press.armywarcollege.edu/monographs/466?utm_source=press.armywarcollege.edu%2Fmonographs%2F466&utm_medium=PDF&utm_campaign=PDFCoverPages.

10. U.S. Army Center for Army Leadership (CAL), "Military Leader Findings," *2016 Center for Army Leadership Annual Survey of Army Leadership (CASAL)*, Technical Report 2017-01 (Fort Leavenworth, KS: CAL, August 2017), 37.

11. Todd C. Helmus et al., *Life as a Private: A Study of the Motivations and Experiences of Junior Enlisted Personnel in the U.S. Army* (Santa Monica, CA: RAND Corporation, 2018), 26–27.

12. CAL, "Military Leader Findings," 48. Thirty-five percent is a low estimate derived by the author. It considers the percentage of soldiers who join purely for occupational reasons (approximately 50 percent), the percentage of leaders who envision remaining

in the Army for a full twenty-year career (approximately 80 percent), and the percentage of leaders who feel their immediate supervisor is intolerant of subordinates' learning from honest mistakes (approximately 45 percent).

13. For promotion rates, see U.S. Army Human Resources Command's "PSB Results & MOI" for each convened board, https://www.hrc.army.mil/content/ACTIVE%20OFFICER%20SELECTION%20BOARDS (CAC required).

14. CAL, "Military Leader Findings," 48.

15. Army Regulation 71-32, *Force Development and Documentation Consolidated Policies* (Washington, DC: U.S. GPO, 2019), 32–33. Unlike deployable MTOE units, TDA units are generally nondeployable, and are organized to fulfill HQDA-directed missions.

16. CAL, "Military Leader Findings," 96.

17. The high end of the range could occur if solely noncareerist subordinates happened to serve under the 55 percent of available risk-accepting supervisors. The low end could occur if every careerist subordinate (35 percent) was placed under a risk-accepting supervisor (55 percent), leaving only a 20 percent difference remaining for a noncareerist subordinate/risk-accepting supervisor match.

18. This simulation was done on Microsoft Excel. Five hundred rows were created to represent each leader. Each row had two cells containing a randomly generated two-digit decimal. The first cell represented the leader's likelihood of predisposition toward placing their career over boldness, and the second cell represented the leader's likelihood of assignment to a unit with a risk-averse supervisor. If a row had a decimal below 35 percent in the first cell, that row was deleted. If a leader had a decimal below 45 percent in the second cell, that cell was deleted. The remaining rows were added up, equaling a total of 157. 157 / 500 = .314, or 31.4 percent.

19. U.S. Army Center for Army Lessons Learned (CALL), "Combat Training Center Trends 2019," No. 20-10 (Fort Leavenworth, KS: CALL, 2019), 2–3, accessed 17 May 2022, https://call2.army.mil/docs/doc17997/17997.pdf (CAC required).

20. Sayce Falk and Sasha Rogers, "Executive Summary," *Junior Military Officer Retention: Challenges and Opportunities* (Cambridge, MA: Harvard University John F. Kennedy School of Government, March 2011), accessed 17 May 2022, https://officercandidatesschool.com/wp-content/uploads/2019/03/Junior-Military-Officer-Retention-Challenges-and-Opportunities-by-Sayce-Falk-Sasha-Rogers-John-F.-Kennedy-School-of-Government-Harvard-University.pdf.

21. CAL, "Military Leader Findings," 11.

22. Townsend, Crissman, and McCoy, "Reinvigorating the Army's Approach to Mission Command," 8; Mission Command Training Program members, discussion with author, Art of War Scholars seminar, Fort Leavenworth, Kansas, 21 March 2022; Combined Arms Doctrine Directorate members, discussion with author, Art of War Scholars seminar, Fort Leavenworth, Kansas, 9 March 2022.

23. Townsend, Crissman, and McCoy, "Reinvigorating the Army's Approach to Mission Command," 6. The authors argue overregulation and long lists of tasks, "much of which had little to do with warfighting or combat readiness," has fostered an environment where leaders are now accustomed to less autonomy—in both training and combat.

24. John Bolton, "Overkill: Army Mission Command Systems Inhibit Mission Command," Small Wars Journal, August 2017, accessed 25 March 2022, https://smallwarsjournal.com/jrnl/art/overkill-army-mission-command-systems-inhibit-mission-command?msclkid=99c9c6eeb0a111ec9023932ca93ee17d.

25. ADP 6-0, *Mission Command*, 2-17.

Sgt. Keith Bradley, a sniper with Alpha Company, 1st Battalion, 17th Infantry Regiment, mans an M-107 .50-caliber long-range sniper rifle to search for enemy presence 10 February 2010 during Operation Helmand Spider in Badula Qulp, Helmand Province, Afghanistan. Soldiers remain critical for decision dominance because humans deal with ambiguity better than machines; automation enhances human performance but does not replace it. (Photo by Tech. Sgt. Efren Lopez, U.S. Air Force)

Command Post Automation

Col. Harry D. Tunnell IV, PhD, U.S. Army, Retired

Decision dominance is "the ability of the commander to sense, understand, decide, act, and assess faster and more effectively than any adversary."

—Gen. John "Mike" Murray

Command post automation applies digital technologies to improve speed and quality of processes in a tactically meaningful way. The idea of decision dominance is enabled by command posts, and the technology necessary to achieve it in command post operations is available today. However, today's

"modern" command post is not really modern at all and lacks the infrastructure for decision dominance. True, command posts have computers and electronic data is common, but managing the staff processes essential for getting fighting units to act relies on arcane manual processes rather than modern automated ones.

Unfortunately, too many senior leaders are not focused on the types of foundational systems necessary to support decision dominance today. Instead, they focus on advanced technologies that will likely not mature for decades. Artificial intelligence (AI), the idea that machines can mimic human cognitive processes, is an example. But Army interests will not be served by AI anytime soon. Dr. Michael Jordan, an AI pioneer, explains that computers will not be able to reason abstractly about real-life situations like humans can for the foreseeable future.[1] If the Army wants to create computing solutions to improve capability for soldiers *today*, Army leaders should focus on current opportunities such as automation rather than expensive immature ideas that will not be able to scale for generations.

Standard processes in command posts, such as the military decision-making process (MDMP), can sometimes be poorly executed, resulting in misunderstood tactical tasks, poor coordination, and a lack of timely execution. Automation, on the other hand, promotes faster execution of repeatable tasks and minimizes errors. These positive attributes can contribute to better outcomes in tactical formations.

When breaking down the idea of decision dominance, there are three challenges that command post technology can help solve. First is to sense and understand the environment. This is enabled by capturing data with sensors and other technology that is reported back to the command post for analysis. Second is to decide. This is enabled by converting the captured data into information and knowledge and presenting it to leaders in easy-to-consume ways. Third is to act and assess. This is enabled by reliable document management and workflow practices to manage and distribute knowledge so that leaders can move in a continual intellectual loop of action and assessment.

This article is the last in a trilogy about command post operations in the digital age. The first article describes a theoretical framework that enables information age tactical operations based upon network-centric warfare theory.[2] The theoretical framework can be used to identify options and create processes, systems, and tools for solving the three challenges of decision dominance. The second article describes a tactical data science practice for command posts and outlines a training program to improve digital skills throughout the Army.[3] Tactical data science teams in command posts combined with Army enterprise-wide digital skills offer a practical solution for challenges one and two.

This article provides a vision for how to solve the third challenge. Tools such as electronic document management systems are increasingly common in business. They can be applied in a military context to enable a commander's ability to act and assess faster than an adversary. Electronic document management systems are cloud-based enterprise software used to manage and store records. The advantages of the systems are that they can improve access to and standardization of records, implement metadata to improve findability, configure security controls to safeguard information as it goes through a process, and apply workflows to ensure that process steps are not overlooked or ignored.

The Value of Command Post Automation

The value of an enterprise-wide ability to act and assess faster than an adversary is obvious. The question is how to obtain this value. Modernization of command post operations enables action and assessment by improving the speed and quality of common tasks such as the production and issue of combat orders. The idea of electronic document management began to gain traction during the 1990s. It was becoming obvious that managing documentation this way would contribute to business value in ways such as improving communication of

Col. Harry D. Tunnell IV, PhD, U.S. Army, retired, is the information technology senior director for Clinical Operations/Digital Solutions at Eli Lilly and Company and an adjunct lecturer in the Department of Human-Centered Computing at Indiana University–Purdue University Indianapolis. Tunnell is a West Point graduate who commanded 1st Battalion (Airborne), 508th Infantry in Iraq and 5th Stryker Brigade Combat Team, 2nd Infantry Division in Afghanistan. He is a senior member of the Institute of Electrical and Electronics Engineers.

Soldiers from warfighting functions throughout the 3rd Infantry Division participate in a targeting working group during Warfighter 22-1 in the Mission Training Center on Fort Stewart, Georgia, 4 October 2021. Most command posts are not modern. Leaders still rely on century-old technologies and antiquated processes such as paper maps, physical overlays, and manual staff processes. (Photo by Sgt. 1st Class Jason Hull, U.S. Army)

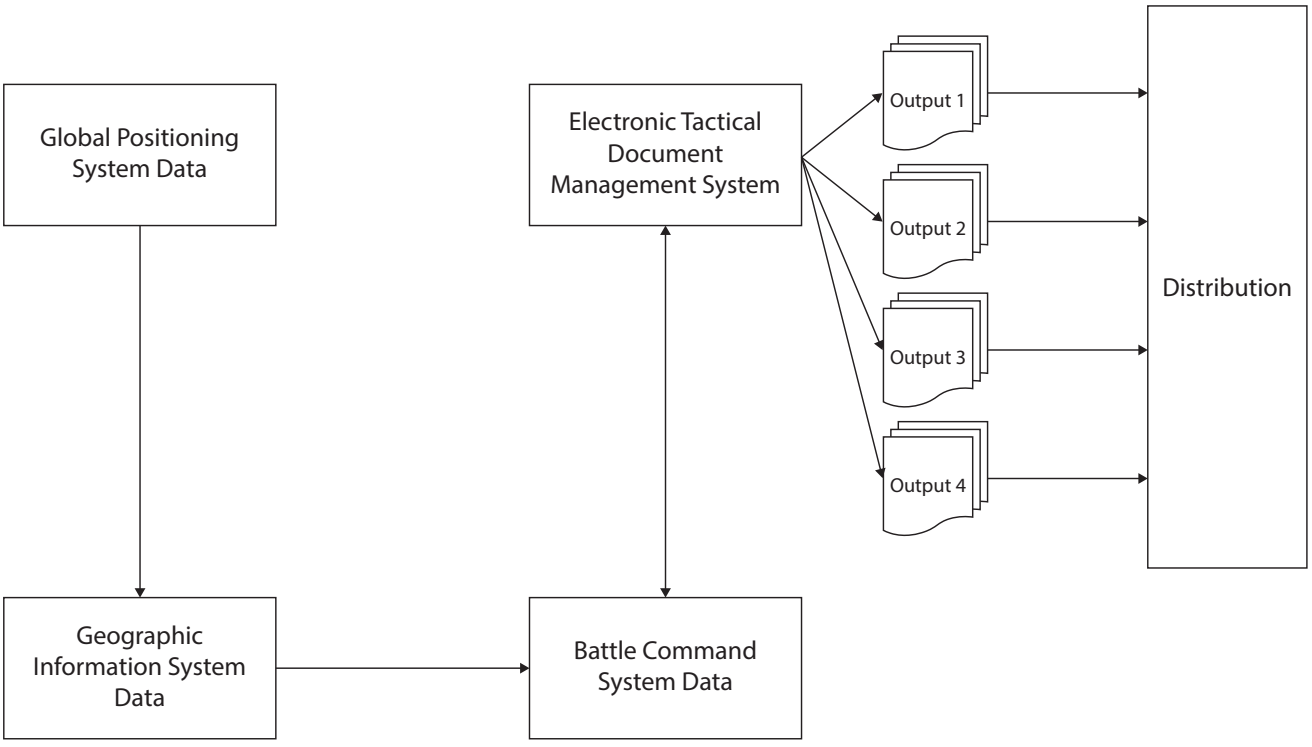
concepts and ideas, increasing productivity of business processes, and leveraging organizational memory to improve productivity and performance.[4]

Advanced future technologies such as AI will not improve processes such as MDMP—the single most important process to get Army formations to act against an enemy. Consequently, to achieve decision dominance, formations need to act faster, and they will only act faster if orders are faster and of better quality, which requires significantly improved *management* of the process that gets formations to act. In the digital world, faster management of processes means electronic document management systems.

Ideas to automate or semiautomate MDMP are not new.[5] What is novel about the automation approach herein is that it can be applied to most doctrinal processes in command posts. Brigade-level MDMP is merely the use case described in this article. And that leads to another value of an electronic document management system—it can be configured to support *many different* processes. A custom system is not required for each process.

Among the major improvements in command posts since the end of the Cold War are the conversion of paper documents to electronic, web portals, digital battle command systems, and computing devices throughout command posts. However, none of these advancements truly enable processes; they are stovepiped innovations. The information and single-use processes they support are poorly integrated or not integrated at all. Consequently, it is difficult to perform an end-to-end multidisciplinary process such as MDMP using them. Furthermore, even with the numerous technologies in command posts, documents are still lost, processes are manually tracked, quality control is minimal or nonexistent, and document security is not managed well.

Advancements in automation have reduced the need for human intervention in some tasks. The advancements combine rules-based approaches that are highly repeatable with modern information approaches such as machine learning. This is a powerful



(Figure by author)

Figure 1. Electronic Tactical Document Management System Example

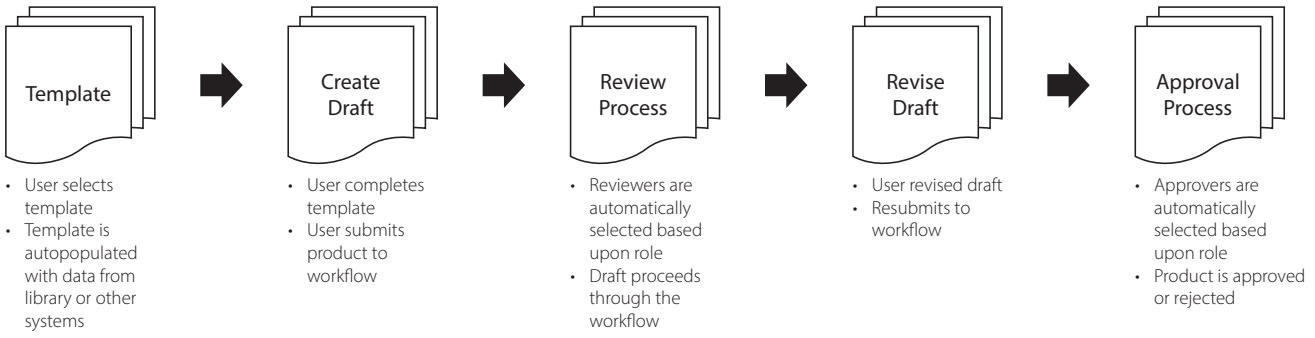
combination that makes processes efficient in terms of timeliness and improves the quality of decisions by surfacing insights from data to leaders.

Business process management (BPM) techniques can be used to identify opportunities for workflow automation. During BPM, process maps are created to provide an overview of process steps, visualize critical relations between them, and evoke an understanding of the organization's operations.[6] Process maps are diagrammatic and often static representations that are useful for process improvement.[7] By visualizing a process, one can identify opportunities to optimize it with automation or create a better process designed for automation from the beginning.

Process maps can also be implemented as interactive artifacts that link processes to supporting materials.[8] For example, a process map for MDMP can show workflow steps and link each step to references (e.g., Field Manual 5-0, *Planning and Orders Production*), related processes (e.g., troop leading procedures), and other materials (e.g., regulations). When a process, subprocess, or task is changed, the doctrine team updates the appropriate process map(s), and this guides updates to systems that must change to support the revised enterprise-level process.[9] Finally, an electronic document management system provides an audit trail. The ideal representation of a decision captures more than the end result, it captures processes and resources for how the decision was made.[10] Audit trails are common in electronic document management and allow users to know how decisions were made, when they were made, and by whom they were made. Imagine the benefit of understanding the history of prior decisions. For example, the audit trail can be used to understand how MDMP was performed when preparing for an after action review. For a maneuver action, the audit trail can be used to evaluate an end-to-end orders process—from the initial MDMP to the subsequent process for related fragmentary orders—to understand how and what decisions were made during an initial engagement and inform decisions about reengaging the enemy force.

Examples of Command Post Automation

The author's concept of command post automation that brings the ideas in this article to life is an Electronic



(Figure by author)

Figure 2. Risk Assessment Workflow Example

Tactical Document Management System (eTDMS), depicted in figure 1 (on page 82). The system is integrated with traditional battle command systems (i.e., intelligence, logistics) so data is shared between systems. And MDMP is the process used in this article to explain how command post automation works.

An eTDMS improves efficiency by providing enterprise-level document storage, automating standard repeatable processes, and managing workflows. The result is faster execution of processes with better quality while limiting errors. Examples of opportunities to improve efficiency with automation in an eTDMS include

- standardized libraries that promote consistency throughout the planning process,
- the ability to reuse prior content for standard paragraphs or terrain analysis, and
- autoclassification of documents (e.g., situation reports, contact reports) with the capability to autogenerate visualizations from the data in them or to incorporate machine learning models into an analysis.

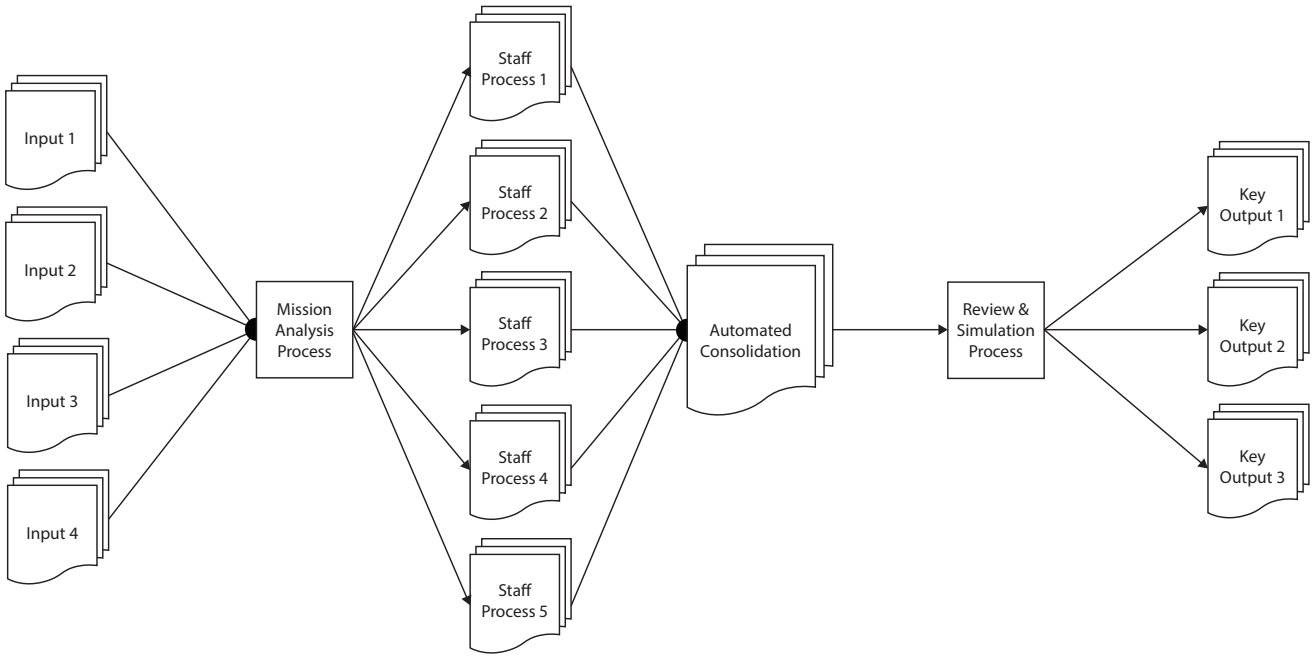
Automating risk assessment scenario. In this scenario, the eTDMS manages libraries of historical risks, errors, and mitigations by tactical task. The system allows users to distinguish between training and combat operations so that the correct context is analyzed. For example, parachute jumps during training are typically conducted with more safety procedures than combat parachute jumps. Training jumps also have a simulated enemy threat.

During combat jumps, drop altitude, number of passes over the drop zone, and securing reserve parachutes are examples of choices leaders have to make. This type of analysis can be automated. Risk scores can be assigned based upon the enemy situation as well as safety procedures. Machine learning models created by the brigade tactical data science team are used to model the real-time enemy situation. Furthermore, the tactical data science team enhances their ground combat models with Air Force data so that enemy air defenses are part of the risk assessment.

An eTDMS increases effectiveness by improving planning quality and reducing errors during content creation. Controls are also applied to prevent errors in orders production and distribution. For example, the system has controls so that the wrong document type is not created for the wrong purpose (e.g., an administrative order when an operations order is appropriate). The eTDMS automates paragraph classification based upon the classification of data at the information source.

To ensure that documentation is complete, the system generates a list of required and optional documents for a specific task or subprocess within the MDMP. This list is integrated with milestones for the overall process so that users know when they must be complete with their tasks or subprocesses. The list can also be tailored for standard and modified processes. For example, in a compressed MDMP cycle, many of the required documents for the standard MDMP might be shown as optional or not required for the compressed process.

Templates are also linked to tasks and subprocesses (see figure 2). This ensures that the correct templates are used for a task or subprocess. Standardizing documentation with templates improves metadata (which can be autogenerated based upon the template and content once completed). It also improves the ability to extract data from documents and to perform advanced analysis with machine learning.



(Figure by author)

Figure 3. Mission Analysis Workflow Example

As part of an eTDMS milestones are autogenerated based upon the time available for planning (i.e., automated implementation of the one-third–two-thirds rule). Automation of workflows includes tracking completion of milestones with reminders, alerts, reports, and visualizations. Examples of opportunities to improve effectiveness with automation in an eTDMS include the following:

- *Email ingestion of documents into the correct file structure for planning.* This ensures the right documents are available throughout the planning process.
- *Consistent use of doctrine for metadata and terms.* For example, an eTDMS can use doctrine such as Field Manual 1-02.2, *Military Symbols*, to define metadata, tactical terms, and symbology.
- *Intelligent planning.* Data from tactical systems (e.g., geographic information systems, Distributed Common Ground System-Army) can be integrated with staff planning workflows in the eTDMS. For example, when a user selects an area on a digital map, terrain and enemy situation descriptions are automatically generated and inserted into the correct parts of a template with the correct classification.
- *Automated dissemination based upon task organization.* When an operations order is published, the command relationships identified in the order can be used to create the distribution list. The order is then automatically disseminated. When controls based upon classification are required, the relevant sections (e.g., any paragraphs classified as secret) are automatically redacted.
- *Simulations.* The system forecasts tactical milestones for an operation. Simulations use up-to-date geographic information system and GPS data as well as real-time updates to the enemy situation.

Automating step 2 of MDMP (mission analysis) scenario. In this scenario, the eTDMS manages the inputs to mission analysis and implements the correct workflow when the inputs are processed (see figure 3). The inputs are the commander's initial guidance, higher headquarters order, higher headquarters intelligence and assessment products, knowledge products from other organizations, and any design products.[11]

The commander uses an eTDMS template to craft initial guidance. Once the guidance document is complete in the eTDMS, it is automatically incorporated into the workflows for the rest of the planning process. (When documents are updated, version control is applied and the updates with notifications are submitted to the workflow.) The higher headquarters emails

Soldiers with the 2nd Battalion, 4th Security Force Assistance Brigade, work in their tactical operations center 3 June 2020 before deploying to the Joint Readiness Training Center and Fort Polk's training area for Rotation 20-08. Note the use of manual processes (e.g., paper maps, paper charts). (Photo by Chuck Cannon)

its products to the brigade. They are automatically ingested into the eTDMS. After ingestion, they are automatically categorized and elements extracted for use in selected workflows (e.g., specified tasks).

The complete set of higher headquarters documents are available in the eTDMS document library. Knowledge products from other organizations and design products are not standardized. Nonetheless, they can be emailed and automatically ingested into a folder for nonspecific documents and manually evaluated. As part of this manual evaluation, they are added to the appropriate workflows.

Throughout mission analysis, milestones are updated (e.g., receipt of order and movement time for the first unit). Unit symbology is automated based upon the task organization. To conclude mission analysis, the various products go through an automated process of consolidation to create the key outputs. The executive officer manages the consolidation process and also decides when simulations are performed. Once the key outputs are reviewed, revised, and approved using workflows for each output they are automated as inputs to step 3 (course of action development).

Conclusion

Automation has several advantages, and it is not a new phenomenon. Today's technology offers numerous opportunities for automation in command posts. What is extraordinary is that so many processes in today's command posts remain manual. They are slow and missing modern quality control measures. Yet the Army continues to promote advanced concepts for information such as AI without improving the baseline processes that are necessary to make the advanced concepts work.

This article has highlighted concepts for command post automation. In closing, there are areas that are beyond the scope of this article but should be brought the attention of the reader. First, there are other opportunities for automation in command posts; this article has

focused on only one, which is document management. Second, automation does not mean a lack of human intervention. For example, humans are part of quality control processes, and some tasks will remain manual because they are not easily configured in the system, the system does not have the right functionality, or humans are simply better at them.

Third, the Army has used digital technologies to perform command and control activities such as disseminating documents for decades. Even though this article does not address the networking and cloud infrastructure to support command post automation, it is inconceivable that a twenty-first-century Army cannot take advantage of or enhance the digital infrastructure that exists today. The operational environment, to include large-scale combat operations, should not be a barrier to command post automation.

Fourth, an eTDMS will be able to support processes between echelons. For example, MDMP occurs at battalion level and above while companies and below perform troop leading procedures. But both processes result in combat orders and the data between the processes overlaps. An eTDMS enables each individual process and shares data between them.

Fifth, an enterprise level system will generate enough standardized data to support machine learning at scale. With such a system, leaders will be able to generate insights from Army-wide data for the appropriate echelon and process. This will truly lead to an ability to act and assess faster than any enemy we might face today. ■

The author thanks Col. Christopher Coglianese, U.S. Army, retired, and Lt. Col. James King, U.S. Army, for reviewing an earlier version of this manuscript.

Notes

Epigraph. Shaun Waterman, "Achieving Decision Dominance by Empowering the Tactical Edge: Sponsored Content," *Signal* (website), 1 August 2021, accessed 6 April 2022, https://www.afcea.org/content/achieving-decision-dominance-empowering-tactical-edge-sponsored-content.

1. Kathy Pretz, "Stop Calling Everything AI, Machine-Learning Pioneer Says," *IEEE Spectrum* (website), 31 March 2021, accessed 6 April 2022, https://spectrum.ieee.org/stop-calling-everything-ai-machinelearning-pioneer-says.

2. Harry D. Tunnell, "Network-Centric Warfare and the Data Information-Knowledge-Wisdom Hierarchy," *Military Review* 92, no. 3 (2014): 43–50, accessed 6 April 2022, https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/MilitaryReview_20140630_art011.pdf.

3. Harry D. Tunnell, "Tactical Data Science," *Military Review* 100, no. 4 (July-August 2020): 123–37, accessed 6 April 2022, https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/July-August-2020/Tunnell-Tactical-Data-Science/.

4. Ralph Sprague Jr., "Electronic Document Management: Challenges and Opportunities for Information Systems Managers," *MIS Quarterly* 19, no. 1 (March 1995): 29–49, accessed 6 April 2022, https://www.jstor.org/stable/249710?seq=1.

5. Jeff Abbott, "Task Based Approach to Planning White Paper," *SCSC '08: Proceedings of the 2008 Summer Computer Simulation Conference* (June 2008): 1–7, accessed 6 April 2022, https://dl.acm.org/doi/pdf/10.5555/2367656.2367684.

6. Monika Malinova, Henrik Leopold, and Jan Mendling, "An Explorative Study for Process Map Design," *Information Systems Engineering in Complex Environments* 204 (2015): 36–51, https://doi.org/10.1007/978-3-319-19270-3_3.

7. Odunayo Fadahunsi and Mithileysh Sathiyanarayanan, "Visualizing and Analyzing Dynamic Business Process Using Petri Nets," *2016 2nd International Conference on Contemporary Computing and Informatics* (2016): 79–84, https://doi.org/10.1109/IC3I.2016.7917938.

8. For an example of the concept, see "Documenting Policies," BlueWorksLive, accessed 5 July 2022, https://www.blueworkslive.com/scr/docs/bwl/topics/policies.html.

9. Ibid.

10. Cheryl Putnam, Jeff Waters, and Olinda Rodas, "A Standard Decision Format Using Provenance," *2017 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)* (December 2017): 216–19, accessed 6 April 2022, https://ieeexplore.ieee.org/document/8388644.

11. Field Manual 5-0, *Planning and Orders Production* (Washington, DC: U.S. Government Publishing Office, 2022), accessed 29 June 2022, https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1024908.

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Eliminating Micromanagement and Embracing Mission Command

Maj. Justin T. DeLeon, U.S. Army
Dr. Paolo G. Tripodi

Whether conducting limited contingency, crisis response, or large-scale combat operations, the U.S. Army will continue to operate in environments characterized by high levels of volatility, uncertainty, complexity, and ambiguity (VUCA).[1] In situations in which VUCA plays a central role, making timely and effective decisions is a critical factor that will determine the difference between success or failure.

The U.S. Army operates in situations in which the best positioned and most effective commander to make decisions might not necessarily be the most senior in the chain of command, but the one that can best understand the implications of VUCA. Commanders operating in such an environment at the tactical and operational levels face two critical decision points. First, they might face situations that unexpectedly provide them with a clear chance to deliver a serious blow to the enemy. Yet, to take full advantage of such an opportunity, they might have to depart from, or "disobey," the orders they had received while remaining inside the intent of their senior commander. Second, they might face a situation in which they have a clear understanding that executing the orders they have received might be detrimental to their overall mission. Again, they might have to decide to disregard certain orders received. U.S. Army leaders might find themselves in the uncomfortable situation of having to make these decisions without the immediate validation of their chain of command. Moreover, multi-domain operations add complexity to the command and control of forces in a VUCA environment where time and initiative are critical. Therefore, the U.S. Army should wholeheartedly embrace a mission command philosophy that empowers the best-positioned leader to make critical decisions.

The Army officially adopted mission command in the early 2000s. Today, Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces*, provides commanders the tools necessary to effectively lead at the tactical and operational levels. ADP 6-0 identifies seven mission command principles: competence, mutual trust, shared understanding, commanders' intent, mission orders, disciplined initiative, and risk acceptance.[2] When integrated and employed correctly, these principles enable initiative and the decentralized decision-making needed in a VUCA environment. Yet, leaders often struggle with micromanagement tendencies, and the Army's organizational culture has not fully embraced the command philosophy.

Capt. Terrence Shields, commander of Iron Troop, 3rd Squadron, 2nd Cavalry Regiment, prepares for movement while participating in the multinational squadron live-fire validation exercise near Bemowo Piskie Training Area, Poland, on 22 March 2018. Battle Group Poland is a unique, multinational battle group comprised of U.S., UK, Croatian, and Romanian soldiers who serve with the Polish 15th Mechanized Brigade as a deterrence force in northeast Poland in support of NATO's Enhanced Forward Presence. (Photo by Sgt. Sara Stalvey, U.S. Army)

Mission Command and Micromanagement

Adding mission command to U.S. Army doctrine has been an important step, yet its adoption is not ensured. Too often, leaders are evaluated on their ability to follow a checklist of doctrinal tasks rather than fostering an environment that encourages disciplined initiative. This contradicts the Army's mission command philosophy and often results in extreme risk aversion among leaders. Furthermore, it can encourage micromanagement, a practice that deprives subordinates of purpose and narrows a leader's focus away from the greater picture.

According to Niko Canner and Ethan Bernstein, micromanaging "is a breakdown in the fundamentals of delegation."[3] It dulls creativity and slows decision-making, reducing the speed in which a unit can react on the battlefield. Canner and Bernstein rightly note that micromanagement is particularly powerful in organizations "where goals and accountability are intricately nested. What your people deliver affects what you deliver, and so on up the chain of command—so the pressure is on everywhere to make sure everyone comes through."[4] Leaders who struggle with micromanagement have a desire to personally manage every aspect of an activity with excessive control. They become increasingly involved in the process or method in which a task is performed instead of trusting subordinate leaders to meet their intent.

Micromanagement can also harm the development of junior leaders by limiting opportunities to manage duties autonomously. According to Raymond Noe, employees' development takes place while on the job.[5] They develop most when they are challenged with tasks that are outside their current skill set. Noe refers to these

as "stretch assignments" and recommends employees be challenged regularly beyond their current capabilities to acquire new skill sets and gain confidence.[6] A learning organization committed to growing effective leaders encourages the delegation of tasks, authorities, and decision-making. Delegating power and authority helps subordinates gain a sense of responsibility while allowing them to feel the weight of their decision.

Daniel Pink investigates the negative effects of micromanagement and the potential role motivation plays to counter it. Pink identifies two competing methods of motivation: Motivation 2.0 and Motivation 3.0.[7] Motivation 2.0 refers to commonly accepted management principles that use control to ensure subordinates meet objectives; it relies on extrinsic motivation techniques. Motivation 3.0 relies on intrinsic motivation and provides a significant amount of autonomy to subordinates.[8]

Leaders who desire more control over their subordinates tend to lead through extrinsic motivators as they reward or punish individuals for their actions. This type of motivation, which Pink refers to as "carrots and sticks," often narrows an individual's focus and stunts creativity.[9] Performance and productivity frequently diminish as subordinates struggle to think past the task at hand with any future vision in mind. Additionally, he argues that this type of motivation may lead to poor or unethical behavior. Individuals who are motivated with extrinsic rewards might be tempted to find the quickest route possible to perform a task, even if it requires them to take a questionable shortcut.[10]

Motivation 3.0 argues that people desire control over their decisions and are willing to be accountable for them.[11] Pink argues that those who are intrinsically motivated are rewarded by the activity itself from which they receive heightened learning and experience.[12] Individuals driven by the process and motivated to excel out of pride and responsibility produce more effective results. Subordinates also benefit from autonomy, as it allows them to gain a greater conceptual understanding of overall operations. In addition, autonomy increases individual and collective productivity and job satisfaction.[13]

When subordinates are given autonomy, not only do they tend to develop creativity, but their overall performance is also elevated. Pink highlights the need to provide subordinates control of the techniques used to accomplish their duties. This resonates with mission command philosophy, which provides subordinates the autonomy to exercise disciplined initiative. Intrinsic and autonomous motivation allows people to have the power of choice, which has a strong effect on performance. Edward Deci and Richard Ryan emphasize the benefit of autonomous motivation and note, "Consistently, autonomous regulation has been associated with greater persistence; more positive affect; enhanced performance, especially on heuristic activities; and greater psychological well-being."[14]

"Individuals driven by the process and motivated to excel out of pride and responsibility produce more effective results. Subordinates also benefit from autonomy, as it allows them to gain a greater conceptual understanding of overall operations."

Moreover, autonomy allows people to feel relevant as partners of a team, rather than subordinates simply executing tasks with no greater purpose in mind. This approach to partnership was also applied by U.S. Marine Corps Gen. James Mattis. While in command of the First Marine Division, Mattis took considerable care to view all subordinate commanders as his equal.[15] He established a unified group of commanders and referred to himself as a quarterback calling plays as part of the team rather than as a superior directing from above. This command philosophy was instrumental in motivating and empowering leaders while promoting trust within his command. Mattis's approach resembles Edgar Schein's "cultural island" concept. According to Schein, cultural islands are a leader-created space "in which some of the societal

rules can be suspended and people are encouraged to be more open about what normally they would withhold."[16] This is a critical experience for team learning, as Schein suggests that "in such team situations, formal status and rank become less important than patterns of who is dependent on whom at a given moment in accomplishing a task."[17] Although theories of organizational performance stress the role played by trust and open communication, they fail to acknowledge that cultural barriers often disrupt the process. Therefore, leaders must understand when and how to create cultural islands where members of a team can communicate openly without fear of reproach.[18] This practice establishes trust up and down the chain of command and promotes open collaboration and dialogue that is instrumental to achieve a greater sense of shared understanding.[19]

Overcentralization and the Influence of French Military Culture on the U.S. Army

Despite striving to align itself with the mission command philosophy, the Army often neglects to recognize that its organizational culture remains overcentralized due in part to its heritage in French military culture. Upon deployment of U.S. forces to Europe during the First World War, Army officers were largely instructed at French military schools that taught them to fight in a centralized manner through rigid adherence to doctrinal standards and principles. Although this approach might have improved short-term effectiveness on the battlefield, the Army lacked speed and initiative at the operational and tactical levels. In May 1918, the impact was felt during the American Expeditionary Force's first offensive as the 28th Infantry Regiment lacked flexibility at the battle of Cantigny. Although German forces were defeated, rigid and overcentralized planning resulted in a high number of casualties while several opportunities to gain initiative were not exploited.[20] Following the First World War, the United States continued to align its doctrinal concepts with those of the French. According to Donald Vandergriff, "When the French developed methodical battle in the interwar years, the United States copied it with all its accompanying process focused education."[21] Furthermore, the Army institutionalized the linear French way of tactics and leader development throughout the 1920s and 1930s.[22]

French influence is still seen today in the strict use of the Army's military decision-making process and the Marine Corps planning process. Both are based on the French Cartesian approach which was implemented after the First World War to promote process-oriented analysis and planning. Although these processes can be effective planning frameworks, Vandergriff argues they can turn planners inward and focus their efforts on outcomes that please superiors instead of properly confronting the environment.[23] The use of these linear planning methods in complex environments may mistakenly convince leaders that they can control the chaos of war. The desire for control and the development of scientific methods and principles to maintain control may encourage leaders to micromanage. In fact, if doctrine is too rigidly applied and leaders are not allowed to employ appropriate levels of creativity on the battlefield, the system itself can become a micromanaging instrument.

Vandergriff noted that large-scale Army training remains overly rigid today.[24] Indeed, as the Army prepares for large-scale combat operations in a multi-domain environment, education and training must facilitate collective proficiency on emerging doctrinal

Maj. Justin T. DeLeon, U.S. Army, is a G-35 planner at the 25th Infantry Division, Schofield Barracks, Hawaii. He holds a Master of Science in management, strategy, and leadership from Michigan State University, a Master of Military Studies from the Marine Corps University, and a Master of Arts and Military Operations from the School of Advanced Military Studies. He has served as an intelligence officer in the 1st Cavalry Division, as a military instructor in U.S. Army Cadet Command, and as a rifle platoon leader in the 172nd Separate Infantry Brigade. His service includes overseas tours in Germany, the Republic of Korea, and Afghanistan.

Dr. Paolo G. Tripodi is a professor of ethics and leadership and Ethics Branch head at the Lejeune Leadership Institute, Marine Corps University. The author of several articles and book chapters, he is the coeditor of *Marines at War: Stories from Afghanistan and Iraq* and *Aspects of Leadership: Ethics, Law and Spirituality*. Tripodi trained as an infantry officer and served with the Italian Carabinieri.

concepts. Proficiency in doctrine certainly allows commanders to trust subordinates when confronted with ambiguous environments on the battlefield. However, Army training must strike a balance and allow leaders, informed by doctrinal concepts, to solve problems through innovation and creativity. Army Doctrine Publication 3-0, *Operations*, suggests that "doctrine acts as a guide to action rather than a set of fixed rules."[25] Doctrine is largely based on lessons learned from past conflicts and on forecasts of what a future conflict may look like. Therefore, officers must be encouraged to be critical of doctrine, and challenge assumptions in training. Such an approach enables Army leaders to iteratively refine doctrinal concepts and better prepare the force for the future fight.

Risk Aversion

The Army's struggle to implement mission command and expel micromanagement tendencies can also be attributed to extreme risk aversion among leaders. Through systemic risk aversion, military organizations often establish a culture that promotes micromanagement and the overcentralization of decision-making authorities. Whether an overly risk adverse culture is established intentionally or inadvertently, this type of environment makes it difficult to cultivate trust among subordinates on and off the battlefield.

Maj. Thomas Rebuck argues that the Army suffers from a "bureaucratic, managerial mindset with a pathological fear of uncertainty and a squeamish aversion to risk."[26] This results in an extreme compulsion to micromanage, as leaders have an unrealistic desire to impose order on the battlefield.[27] Risk aversion also stems from a lack of trust that might inhibit leaders from developing subordinates and providing them appropriate levels of autonomy. Additionally, careerism among leaders can develop a culture where trust is lacking.[28] Leaders may exercise rigid control to protect themselves from subordinates' failures. The policy then becomes a game of exercising constant mitigation to avoid mistakes as opposed to working toward success as a team.[29] As a result, officers may resort to the use of micromanagement practices and shy away from providing subordinate leaders autonomy and the benefit to learn from errors. As Mattis warns, "If the risk takers are punished, then you will retain in your ranks only the risk averse."[30] This may not be done maliciously or with ill intent but may be the result of a zero-defect organizational culture.

A high level of risk aversion encourages micromanagement, but the overstatement of risk multiplies these negative effects. Overstating risk adds excessive parameters to subordinates, denying them the ability to be agile and use initiative to solve complex problem sets or to pursue unexpected opportunities.[31] ADP 6-0 stresses that "an order should not trespass upon the province of a subordinate. It should contain everything that the subordinate must know to carry out his mission, but nothing more."[32] Moreover, the overstatement of risk trespasses upon subordinates' ability to operate and excessively limits the parameters in which they can exercise initiative. If risk is overstated, then intent will not leave space for subordinate action and decisions will be held at higher levels than they belong. This undermines a mission command philosophy while slowing the decision-making process, making the Army less agile.[33]

Organizational Culture and Mission Command

In a 2019 study on military organizational culture, Peter Mansoor and Williamson Murray stressed, "Culture is clearly a crucial determinant to the effectiveness of military organizations."[34] Edgar Schein defines the culture of a group "as the accumulated shared learning of that group as it solves its problems of external adaptation and internal integration; which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, feel, and behave in relation to those problems."[35] Organizational culture plays a pivotal role in how leaders manage and lead subordinate teams.

Policies, regulations, and codified systems encourage leaders' behavior at all levels. Organizational culture is the key to developing effective leaders and minimizing negative management styles such as micromanagement. Schein noted that the way an organization selects its leaders for promotion plays a significant role in the formation of the organization's culture.[36] Therefore, if the empowerment of subordinates becomes a consideration for promotion, leaders are motivated to continue this practice and micromanagement tendencies begin to diminish. Without this understanding, empowerment of subordinates varies depending on the beliefs and values of each individual leader.[37]

Col. Robert Born, commander of 1st Brigade Combat Team, 101st Airborne Division (Air Assault), briefs Maj. Gen. Brian E. Winski, commanding general of the 101st Airborne Division and Fort Campbell, Kentucky, on his defensive plan via a map on the hood of a humvee after a press conference 19 September 2020 during operations at the Joint Readiness Training Center, Fort Polk, Louisiana. (Photo by Staff Sgt. Justin Moeller, U.S. Army)

History provides examples of enlightened leaders and organizations who understood the perils of micromanagement and embraced a decentralized decision-making approach with excellent results. Not only did they appreciate the beneficial impact of adopting mission command, but they also made sure the organization embraced such a philosophy. Mission command remains strongly associated with the German approach, *Auftragstaktik*. Yet decades before Auftragstaktik was introduced in the 1870–1871 Franco-Prussian War, Adm. Horatio Nelson had adopted a philosophy of command that empowered leaders in his chain of command. During Nelson's most important battle at Trafalgar, "the Royal Navy won Nelson's greatest victory while the admiral himself bled to death below decks."[38] He had delivered his commander's intent and empowered a decentralized decision-making process in such an effective way that his own presence became irrelevant for the Royal Navy's success.

The interwar period provides strong evidence that a decentralized command philosophy promotes effective innovation at the operational and tactical levels, while a centralized approach has the opposite effect. During this period, the German army established a culture that encouraged critical thinking and debate among officers regarding war, tactics, and operations.[39] This allowed the organization to iteratively evaluate doctrinal concepts and improve them over time. Moreover, the German command culture developed an officer corps that was empowered to learn and adapt on the battlefield.[40] Conversely, the French army favored a centralized command philosophy, and allowed the French War College to develop doctrine with limited input from the broader officer corps.[41] Senior military leaders, also inhibited debate on doctrinal concepts. Under the leadership of Gen. Maurice Gamelin, dissenting opinions were not tolerated in the French army, and open discourse diminished. This

resulted in rigid adherence to the "methodical battle" doctrine that emphasized tightly controlled operations.[42] On one hand, the German army's approach enabled it to develop the blitzkrieg operational concept, shifting the paradigm in combined arms warfare. On the other hand, the French approach produced an army that lacked operational flexibility. Among other factors, this contributed to its inability to adapt during the German offensive in May 1940.

Mattis's experience in command of First Marine Division is an enlightening example of a proper application of mission command philosophy. Mattis strongly encouraged leaders to exercise judgment and initiative. He understood the detrimental consequences of asserting excessive control. Opportunities on the battlefield were fleeting, and only through decentralized decision-making and disciplined initiative could the Marines achieve the speed necessary to capitalize.[43] The Marine general also articulated to his subordinates that they had the freedom to deviate from original plans when facing unexpected variables on the battlefield as long as they remained within his commander's intent.[44] Such an approach emphasized the need for clear and open communication to ensure his subordinates understood his intent at all times.

Commander's intent must have a great level of clarity, be easily comprehended, and provide valuable information. According to Mattis, subordinate commanders "cannot seize fleeting opportunities if they do not understand the purpose behind an order. The correct exercise of independent action requires a *common understanding* [emphasis by authors] between the commander and the subordinate, of both the mission and the commander's intent of what the mission is expected to accomplish."[45] In Mattis's view, common understanding has to be truly shared at all levels.[46] He wrote, "If a corporal on the front lines could not tell me what my intent was, then I had failed. Either I had not taken the time to be clear or my subordinates were not effectively conveying it down the chain of command."[47] Mattis's belief is echoed by Gen. Stanley McChrystal as he stressed that "team members tackling complex environments must all grasp the team's situation and overarching purpose. Only if each of them understands the goal of a mission and the strategic context in which it fits can the team members evaluate risks on the fly and know how to behave in relation to their teammates."[48] Mattis and McChrystal's views are in line with ADP 6-0, which explains commander's intent must be clear and provide an overarching purpose that describes what success looks like.[49] Furthermore, effective commanders clearly and concisely communicate intent while fostering a collaborate environment that allows all members to achieve shared understanding.

Mission Command on the Contemporary Battlefield

Advancement in technology and communication allows leaders to command and control subordinate elements more effectively than ever before. However, instant situational awareness and communication increase the temptation to micromanage and undermine a mission command philosophy. With new technologies and increased operational tempo, leaders may overcentralize and unduly influence decisions that belong at lower levels of war.[50]

McChrystal, a strong advocate of decentralized decision-making, provides an exhaustive discussion about this problem in his book *Team of Teams: New Rules of Engagement for a Complex World*. While in command of the Joint Special Operations Command, McChrystal recognized the organization suffered from an efficiency problem. Developments in technology and communications were allowing high-level leaders, himself included, to maintain control of operations that lower-level commanders were supposed to manage. McChrystal admits, "For a closet micromanager, it was a new opportunity to pull the puppet strings from great distances."[51] Subordinate commanders were forced to move through a bureaucratic approval process to conduct certain missions. This slowed the decision-making process, resulting in missed opportunities. To solve the issue, he instituted a policy of "empowered execution," which delegated decision-making authority down to the proper and most effective levels. McChrystal stressed that embracing "empowered execution would transform the way we thought about power and leadership."[52] As part of this initiative, he did not remove himself from the process completely but worked to maintain visibility and make himself available to provide clarity on his intent whenever necessary. To support this policy, McChrystal adopted an approach that advocated a high level of shared understanding, which he called "shared consciousness."[53] The

shared consciousness concept ensured that subordinate commanders were privy to all information and intelligence and were consistently updated on commander's intent. McChrystal accomplished this mainly during his morning video conference meetings with subordinate elements, during which they received updates in intelligence and operational guidance. As a result, the general was able to influence his subordinates daily and ensure that they understood his intent as the environment changed. Additionally, morning meetings provided a forum for subordinates to communicate with one another, increasing collaborative efforts among the force. The meetings developed a state of shared consciousness between McChrystal and his subordinates that gave him the confidence to delegate most decisions previously held at his level. The outcome was staggering. As a result of his empowered execution and shared consciousness policies, the organization was able to increase its raids per month from ten to an astounding three hundred.[54] Using these policies, McChrystal created a lethal and efficient organization while demonstrating the positive effect decentralized operations have on the modern battlefield.

“McChrystal created a lethal and efficient organization while demonstrating the positive effect decentralized operations have on the modern battlefield.”

Nonetheless, as technology and communications continue to advance, commanders might be tempted to micromanage and hold decision-making authority at levels higher than necessary. The Army cannot simply hope all commanders have the resolve and confidence to delegate decision-making as McChrystal did. The Army's culture must support mission command and encourage commanders to develop a shared-consciousness process within their respective organizations. Leaders should use advancement in technology and communications to retain situational awareness, yet without interfering with subordinate commanders. They should adopt McChrystal's approach of "eyes on, hands off." In addition, they should make sure they use any opportunity to communicate, clarify, discuss, or reiterate their commander's intent and the overall mission of the organization to attain an enduring state of common understanding.

The Future of Mission Command

McChrystal and Mattis's visionary approaches to command in their respective organizations, and their enlightening intellectual reflections, have prompted much thinking about the future of mission command. In a 2017 *Parameters* article, "Mission Command 2.0," Anthony King argues that mission command has changed due to advancement in technology and mission type. He states, "Mission command today does not involve mere local, individual initiative but rather a deep and enduring interdependence between commanders across levels."[55] King's view echoes Pink's discussion on motivation 3.0 and autonomy. Pink notes autonomy does not imply subordinates should conduct themselves independently, but instead they should have the freedom of choice that empowers them to choose how to work interdependently with others.[56]

To support his argument, King references McChrystal's shared consciousness concept, which promotes cooperative efforts between commanders while keeping them in line with McChrystal's overall intent. King also uses Mattis as an example in the evolution of mission command. He notes Mattis and his staff gained expertise in identifying decision points the First Marine Division was likely to see on the battlefield. According to King, Mattis's subordinates "did not act on their individual initiative or instinct," as decisions and second and third order effects were already fleshed out.[57]

King's analysis brings clarity to the modern practice of mission command, but his conclusions may be flawed to some extent. His overconfidence on a staff's ability to predict future decision points ignores that war is inherently unpredictable. Moreover, he fails to acknowledge the effect VUCA has on the operating environment. VUCA regularly triggers chance

Paratroopers assigned to the 173rd Airborne Brigade plan during exercise Swift Response 17 in Hohenfels, Germany, 10 October 2017. Swift Response is an annual U.S. Army Europe-led exercise focused on allied airborne forces' ability to quickly and effectively respond to crisis situations as an interoperable multinational team. (Photo by Staff Sgt. Alexander C Henninger, U.S. Army)

alterations to the environment, forcing leaders to make decisions that could not have been preplanned or foreseen. Consequently, King takes great effort to speak of McChrystal's shared-consciousness initiative but lacks depth in his discussion of empowered execution. His analysis views mission command solely through the lens of higher-level commands such as the International Security Assistance Force in Afghanistan, Joint Special Operations Command, and the First Marine Division. FM 6-0 rightly states that mission command's focus is on tactical commanders.[58] Solely analyzing mission command through the lens of these higher-level commands may not accurately represent its implementation at the tactical level, where communication becomes increasingly difficult.

King's argument also only references the Iraq and Afghan wars. It fails to recognize the harsh realities the Army faces conducting large-scale combat operations in a multi-domain environment. On the future battlefield, the Army will have to operate in a dispersed manner, and leaders must also recognize that adversarial action will force the Army to operate in degraded environments where communication may be denied or compromised.[59] This emphasizes the need to implement a true mission command philosophy that promotes decentralized decision-making. If decision-making authorities are kept at too high of levels, it will significantly disrupt operations and slow the decision-making process. The Army cannot afford to be complacent during this postwar period. It cannot rely on the ease advanced technology and communications brought to the Iraq and Afghan wars as the environment will be largely different at the onset of a potential peer-on-peer conflict.

Conclusion

The greatest obstacle standing between the Army and the full adoption of mission command is its own culture. Vandergriff explains, "Until the U.S. Army is

realistic about the shortcomings of our institutional culture, it will never be able to embrace and practice mission command."[60] If the Army hopes to attain success on the contemporary battlefield, micromanagement at all levels must cease, and the Army must remove ineffective leadership practices at all levels of war. As part of the solution, the organization must communicate the hazards of overcentralized command and create an urgency among its leaders for change. Moreover, it must promote officers who nurture a mission command philosophy.

Leaders at all levels have acknowledged that such a philosophy has the potential to make the organization more effective, not only at the execution of its mission but also for the development of creative, visionary leaders able to understand and plan for future conflicts. The Army, however, maybe unintentionally or unconsciously, remains resistant to a practical application of mission command. Micromanagement, risk aversion, and a culture that does not fully promote trust up and down the chain and laterally remain obstacles to deal with. For an effective adoption of mission command, the U.S. Army should embrace critical concepts developed by visionary leaders like Mattis and McChrystal such as common understanding, shared consciousness, and empowered execution. This will develop the adaptive leaders the Army needs in combat while producing the freedom of thought necessary to cultivate peacetime innovation.

Common understanding and shared consciousness are key when creating a strong organizational culture in which all members of the organization see themselves as part of a team playing different roles rather than only as subordinate executors. Common understanding is critical to establish and maintain a strong culture of trust that promotes a sense of shared ownership, through which all the members of the unit not only feel they own the mission but that they are important for the accomplishment of such a mission. Mattis and McChrystal articulated how essential common understanding and shared consciousness are. They stressed the value of the team, the critical role played by commander's intent and its dissemination, and the importance of sharing information at all levels.

Schein's cultural islands concept provides leaders a practical approach to achieve candid dialogue and collaboration in line with Mattis and McChrystal's philosophies. Cultural islands are opportunities for leaders at all levels to establish a culture of trust and become intimately acquainted with their subordinate leaders. They become places where an informal understanding of commander's intent can be solidified. Common understanding and shared consciousness develop throughout the team in a variety of venues, yet cultural islands play an important role for the creation of an organizational culture that in Schein's view "is a shared product of a shared learning."[61] Schein stressed that when the organization embraces shared learning, group identity and cohesion play a strong role to define "for the group who we are and what is our purpose or reason to be."[62] Common understanding and shared consciousness are critical for an organization that values shared learning and effective collaboration. Yet, understanding can only be achieved when commanders use approaches such as cultural islands to facilitate collaboration and dialogue where subordinates have no fear of reproach.

Armed with a culture of trust and an organization whose identity is the outcome of common understanding and shared consciousness, leaders should see the value of adopting a truly decentralized decision-making process through which they delegate authority to the level where decisions are going to be the most effective. Empowered execution is the next step for a strong adoption of mission command that minimizes or eliminates micromanagement while containing risk aversion. Furthermore, this approach helps leaders resist the overuse of extrinsic motivators and provide more autonomy to subordinates. Mattis stressed, "My young folks always got me out of every jam I got them into because they had the authority to do it ... so delegate, delegate to the point you're almost uncomfortable ... Keep pushing the authority to make decisions to lower and lower levels and it will reward you. Eventually it will even make you a four-star general."[63] Leaders should see the great benefit empowered execution has for them and the organization so they will not give in to the temptation to micromanage, and they will increase tolerance for risk. It is in that "uncomfortable" moment when leaders might give in to micromanagement, yet if they have an organization with a strong culture of trust based on common understanding and shared consciousness, they will be in a better position to resist the urge. ■

Notes

1. Kirk Lawrence, *Developing Leaders in a VUCA Environment* (Chapel Hill, NC: UNC Kenan-Flagler Business School, 2013), 2, accessed 2 June 2022, https://www.cfmt.it/sites/default/files/af/materiali/Developing-leaders-in-a-vuca-environment.pdf.

2. Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces* (Washington, DC: U.S. Government Publishing Office [GPO], 2019), 1-7.

3. Niko Canner and Ethan Bernstein, "Why Is Micromanagement So Infectious?," *Harvard Business Review*, 17 August 2016, 2.

4. Ibid., 3.

5. Raymond A. Noe, *Employee Training & Development*, 8th ed. (New York: McGraw-Hill Education, 2020), 418.

6. Ibid.

7. Daniel Pink, *Drive: The Surprising Truth About What Motivates Us* (New York: Riverhead Books, 2009), 75.

8. Ibid., 75, 87.

9. Ibid., 54.

10. Ibid., 49.

11. Ibid., 105.

12. Ibid.

13. Ibid., 89.

14. Edward Deci and Richard Ryan, "Facilitating Optimal Motivation and Psychological Well Being Across Life's Domains," *Canadian Psychology* 49, no. 1 (2008): 17.

15. Anthony King, "Mission Command 2.0: From an Individualist to a Collectivist Model," *Parameters* 47, no. 1 (Spring 2017): 15.

16. Edgar H. Schein with Peter Schein, *Organization Culture and Leadership*, 5th ed. (New Jersey: John Wiley & Sons, 2017), 28.

17. Ibid.

18. Ibid., 120.

19. ADP 6-0, *Mission Command*, 1-8.

20. Charles E. Heller and William A. Stofft, *America's First Battles* (Lawrence: University Press of Kansas, 1986), 330.

21. Donald Vandergriff, *Adopting Mission Command* (Annapolis, MD: Naval Institute Press 2019), 49.

22. Ibid., 50.

23. Ibid., 49.

24. Donald Vandergriff, "The U.S. Army Culture is French," in *Mission Command: The Who, What, Where, When, and Why*, ed. Donald Vandergriff and Stephen Webber (self-pub., CreateSpace, 2017), 116.

25. ADP 3-0, *Operations* (Washington, DC: U.S. GPO, 2019), 1.

26. Thomas Rebuck, "Mission Command and Mental Block: Why the Army Won't Adapt a True Mission Command Philosophy," in Vandergriff and Webber, *Mission Command*, 88.

27. Ibid., 93.

28. Joe Labarbera, "The Sinews of Leadership: Mission Command Requires a Culture of Cohesion" in Vandergriff and Webber, *Mission Command*, 4.

29. Ibid., 13.

30. James N. Mattis and Francis J. West, *Call Sign Chaos: Learning to Lead* (New York: Random House, 2019), 45.

31. Ben Summer, "Slow, Inflexible, and Micromanaged: The Problems of a Military that Overstates Risk," Modern War Institute at West Point, 9 May 2017, accessed 2 June 2022, https://mwi.usma.edu/slow-inflexible-micromanaged-problems-military-overstates-risk/.

32. ADP 6-0, *Mission Command*, 1-10.

33. Summer, "Slow, Inflexible, and Micromanaged."

34. Peter Mansoor and Williamson Murray, eds., *The Culture of Military Organizations* (New York: Cambridge University Press, 2019), 3.

35. Schein, *Organization Culture and Leadership*, 6.

36. Ibid., 194–95.

37. William Oncken Jr. and Donald Wass, "Management Time: Who's Got the Monkey?," *Harvard Business Review* (website) (November-December 1999), accessed 28 September 2020, https://hbr.org/1999/11/management-time-whos-got-the-monkey.

38. Graham Scarbro, "'Go Straight at 'Em!': Training and Operating with Mission Command," *Proceedings* 145, no 5. (May 2019), accessed 2 June 2022, https://www.usni.org/magazines/proceedings/2019/may/go-straight-em-training-and-operating-mission-command.

39. Williamson Murray, "Armored Warfare: The British, French and German Experiences," in *Military Innovation in the Interwar Period* (New York: Cambridge University Press, 1996), 47.

40. Ibid., 48.

41. Ibid., 31–32.

42. Ibid., 32, 34.

43. Michael L. Valenti, *The Mattis Way of War: An Examination of Operation Art in Task Force 58 and 1st Marine Division* (Leavenworth, KS: United States Army Command and General Staff College Press, 2014), 43–44.

44. Ibid.

45. Mattis and West, *Call Sign Chaos*, 45.

46. ADP 6-0, *Mission Command*, 1-8. The term "common understanding" is referred to as "shared understanding" in ADP 6-0.

47. Mattis and West, *Call Sign Chaos*, 44–45.

48. Stanley McChrystal et al., *Team of Teams: New Rules of Engagement for a Complex World* (New York: Penguin, 2015), 99.

49. ADP 6-0, *Mission Command*, 1-10.

50. Rosario Simonetti and Paolo Tripodi, "Automation of the Future of Command and Control: The End of Auftragstaktik?," *Journal of Advanced Military Studies* 11, no. 1 (Spring 2020): 127.

51. McChrystal et al., *Team of Teams*, 218.

52. Ibid.,198.

53. Ibid., 20.

54. Ibid., 218.

55. King, "Mission Command 2.0," 8.

56. Pink, *Drive*, 88.

57. King, "Mission Command 2.0," 20.

58. ADP 6-0, *Mission Command*, viii.

59. U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 525-3-1, *The US Army in Multi-Domain Operations* (Fort Eustis, VA: TRADOC, 2019), 20.

60. Vandergriff, "The U.S. Army Culture is French," 103.

61. Schein, *Organization Culture and Leadership*, 6.

62. Ibid.

63. Charlie Dunlap, "A Conversation with General Jim Mattis about Leadership … and Much More!," Lawfire, 14 March 2021, accessed 2 June 2022, https://sites.duke.edu/lawfire/2021/03/14/a-conversation-with-general-jim-mattis-about-leadership-and-much-more/.

The U.S. Army Development Command Ground Vehicle Systems Center showcases robotic and autonomous technological advancements for subterranean environments during a demonstration 2 December 2021 in Rolla, Missouri. Deploying autonomous and sensor-enabled robotic systems can provide the warfighter a tactical advantage through the ability to perform remote reconnaissance and other specific mission tasks while decreasing overall human exposure to risks and lessening physical and cognitive load. (Photo by VIDS Corp, U.S. Army)

Realize the Future

L. Lance Boothe

Now is the time for revolutionary change. Times are changing, and the U.S. military must change with them or lose the next war.[1]

If the above assertion is disconcerting, or even provocative, then consider what happened in the recent Nagorno-Karabakh conflict between longtime enemies Azerbaijan and Armenia. Autonomous and remote-controlled drones defeated manned systems and soldiers throughout the battlespace at every echelon of war.[2] The fight between drones and manned systems was not even close—drones won decisively. Armenian losses were 185 T-72 tanks, 90 armored fighting vehicles, 182 artillery pieces, 73 multiple rocket launchers, 26 surface-to-air missile systems (including a Tor system and five S-300s), 14 radars or jammers, one SU-25 fighter-bomber, four drones, and 451 other types of military vehicles to 25 drones lost by the Azerbaijanis.[3] This represents a watershed moment in warfare.[4]

Here is what the first postmodern war of the twenty-first century teaches: other professional militaries are operationalizing the potentiality of robotic and autonomous systems (RAS). They realize the future.

The skeptic or cynic (or both) may say drones are nothing new. The difference is autonomous systems made a debut in relative mass, and in the clash between two ostensibly professional armies, one decimated the

other with remote-controlled and autonomous systems to an extent never seen before. The Nagorno-Karabakh conflict was not a fight between a superpower with complete domain dominance and a bunch of tribesmen from the third world, or imported jihadists interspersed amongst insurrectionists from a defunct third-rate military. In addition, vaunted Russian electronic warfare prowess never materialized despite its availability to both belligerents. By all accounts, Azerbaijani drones were not electronically interdicted in any meaningful way or otherwise jammed off the airwaves. They proved accurate and deadly. In fact, Azerbaijani success alarmed the Russians into brokering a ceasefire, or as the assessment from the George C. Marshall European Center for Security Studies bluntly states, "Turkey won the war for Azerbaijan but lost the peace to Russia."[5] It behooves the U.S. military to take notice.

AI and RAS—A Common Understanding

Alexander Kott, the chief scientist at the U.S. Army Research Laboratory, asserts that artificial intelligence (AI) is a new form of sentient intelligence on Earth.[6] Kott and David Alberts from the Institute for Defense Analysis further assert that not only will humans find themselves "to be merely a particular species of intelligent entities, in fewer and fewer numbers in relation to other intelligent things," but "some of these intelligent species need to be considered, from a management perspective, as entities with decision-making responsibilities, similar to human individuals to be accounted for in the design of our organizations."[7] The Futures and Concepts Center of U.S. Army Futures Command produced a concept on operationalizing robotic and autonomous systems for multi-domain operations.[8] Their concept demonstrates that for several years, the U.S. Army recognized RAS potentiality, investing time, money, and intellectual energy to explore this revolutionary technology, unfortunately without significant, comprehensive implementation. However, RAS is just half of the equation. AI is the logical fit to RAS. RAS must be intelligent, not an automaton running off unidimensional coding.

Before venturing into artificial intelligence remote autonomous systems (AI-RAS) capabilities, AI and RAS need definition. Artificial intelligence is software that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. AI mimics cognitive functions that humans associate with other human minds, such as learning and problem solving, often incorporating a greater multitude of variables at superhuman speed.[9] Remote autonomous systems are unmanned machines, which sense, decide, and act without human intervention after receiving initial guidance. AI is the brain. RAS provides the muscle through sensory perception.

While the following AI-RAS capabilities discussed herein are by no means exhaustive, they are a start point. They are the most significant. The U.S. military must invest heavily, retooling the entire joint portfolio, to comprise AI-autonomous munitions, AI-autonomous weapon platforms, and AI-RAS sustainment.

The joint force must operate in communications- and GPS-denied environments. It is obvious that the U.S. military over-relies on satellite communications. Equally obvious is that the United States is losing the space race, which it once led. U.S. adversaries know these shortcomings and factor them into their antiaccess/area denial (A2/AD) strategies and capabilities. Besides denying the U.S. military air supremacy, denying it the means to communicate strategically, operationally, and tactically is of equal value and perhaps more feasible, cost effective, and damaging. So having a munitions suite that can engage targets at strategic and operational ranges without GPS or satellite communications is imperative.

The Same Old, Same Old or Revolution

The services are vying for scarce resources, which is hard to imagine given a budget of over $700 billion annually; nevertheless, the infighting largely rages over investments in sunset capabilities, not truly cutting-edge capabilities like AI-RAS. The current planning, programming, budgeting, and execution process promotes parochialism. The planning, programming, budgeting, and execution is hidebound, overly bureaucratic, and inflexible. This is not how the joint force realizes the future.

A real revolution in military affairs needs to start immediately. It begins with a wholesale, unabashed embrace of AI-RAS. What does this portend for the joint force? Everything, including changes in organizational structures, command and control (C2), operational employment, and personnel requirements. Even the overall character and relationships of the armed services will change. Some services may go, and the ones that remain will be radically altered. Perhaps the days

of just an army and navy will return but not in current form or as once known.

Sunset capabilities like manned aircraft, large surface combat ships, and personnel-intensive brigade combat teams will give way to AI-RAS. Planning, organization, and C2 functions and functionaries like the Napoleonic staff, the seventy-two-hour air tasking order cycle, and large centralized headquarters (attempting to command a vast array of forces in near real-time) will also yield to the march of technology. Warfare does not respect tradition, sentimentality, or outmoded capabilities and functions. The hard truth is that peer adversaries will force the U.S. military to embrace AI-RAS with all the radical changes across the doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy spectrum it entails. AI-RAS presents an existential challenge. The wave of the future in warfare is AI-RAS.

AI-RAS does not require expensive, large, maintenance-intensive delivery platforms. Airplanes that cost tens of millions of dollars, even hundreds of millions, are simply not economical. Ships that cost billions are worse. The pacing items around which the services revolve will change (or disappear) as AI-RAS come online. Why have an air force with billions of dollars of obsolete manned fighter-bomber aircraft? Multiple launch rocket systems are significantly cheaper, and they fire more munitions in the aggregate. They can deliver AI-RAS munitions more economically and with far less risk/cost to personnel and equipment. Why have surface ships with enormous electronic signatures? If the United States is going to spend billions on a navy, at least invest in its real strength: undersea warfare where the U.S. Navy rules the waves. Aircraft carriers may project strength, but they are not strong, and they are not required to launch AI-RAS. A submarine that can approach the littorals through stealth is a far more viable delivery mechanism.

If senior military leaders and policy makers take a cold, hard, rational look at AI-RAS potentiality and the demands of a future operating environment dominated by AI-RAS, it becomes rather obvious as to what capabilities stay and what capabilities go. The U.S. military must break the chains of parochialism. U.S. Army Futures Command's experiments, studies, and tabletop exercises are relatively conclusive. The future operating environment is not a place conducive to manned aircraft, lumbering brigade combat teams, or vast surface fleets. However this reorganization falls out, and it will happen, the U.S. military is in for significant structural and operational changes, once AI-RAS is fully realized.

Enter AI-Autonomous Munitions

AI-autonomous munitions are optimal for operating in "black out" periods when communications are disrupted or denied.[10] As the Center for Security Studies asserts, "Future combat drones will be able to penetrate adversary's air defenses and operate in contested battlespace."[11] Without reliance on external long-range radio frequency communications, AI-autonomous munitions are programmed with attack guidance to engage designated targets through onboard databases, significantly mitigating any interference across the electromagnetic spectrum (EMS). Electromagnetic pulse hardening and EMS protections for AI-autonomous munitions will most likely be expensive initially, but as more and more munitions are produced the price point reduces and the technology improves.

AI-autonomous munitions perceive and analyze the environment in which they are employed, evading detection and interception, and then acquire designated targets independent of human direction. These are the ultimate "fire and forget" weapons. These weapons can scan and think, evading countermeasures, and they are impervious to EMS interference. AI-autonomous munitions maneuver onto targets through internal navigation and data processing capabilities linked to an array of onboard sensors (electro-optical, infrared, audio, and high-frequency electromagnetic waves), striking designated targets more accurately and more reliably than current guided munitions while achieving greater effects on targets by analyzing and engaging target vulnerabilities for maximum lethality. AI-autonomous munitions employ or contain countermeasures to interdiction such as reflective surfaces, electromagnetic pulse hardening, radar detection, and terrain conforming and concealing flight.

AI-autonomous munitions are most effectively employed in "wolf packs" that communicate among

L. Lance Boothe is a senior field artillery specialist and concepts developer at the Fires Center of Excellence, Fort Sill, Oklahoma. He is a veteran of Bosnia, Albania, Afghanistan, and Iraq. He holds a BA from Brigham Young University and an MA from the University of Colorado.

themselves through lasers to determine the best attack profile to overwhelm countermeasures, striking at target vulnerabilities and massing effects.[12] Target engagement becomes an even more brutal and systematic team sport where endurance and efficiency are prized equally with destructive force. AI-autonomous munitions hunt within designated target areas, attacking targets in accordance with programmed priorities to achieve desired effects. If targets are not acquired within the primary target area, the munition seeks targets in other areas.

A U.S. Marine Corps Hero-400 loitering munition drone is staged before flight 25 May 2022 on San Clemente Island, California. Department of Defense entities are beginning to incorporate the Hero-400 into specific mission sets. (Photo by Lance Cpl. Daniel Childs, U.S. Marine Corps)

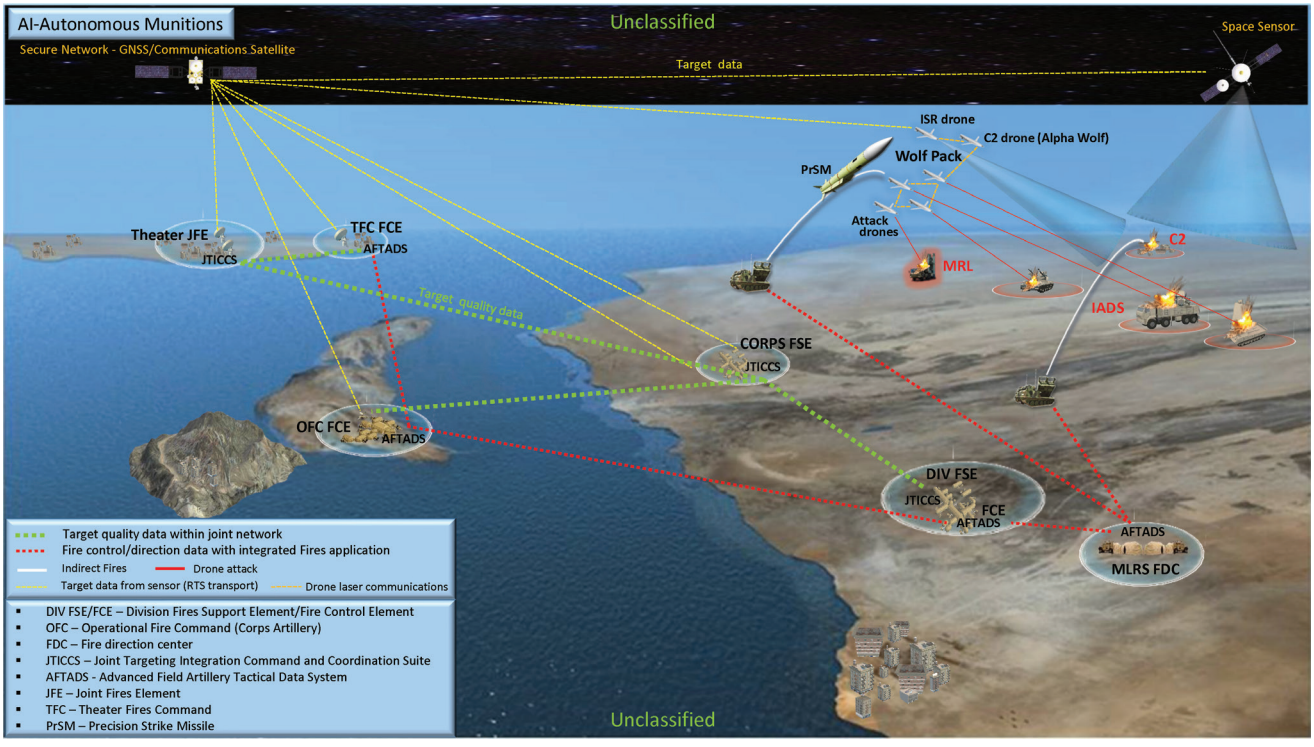
AI-autonomous munitions can be individually delivered directly from a weapon platform onto a target or as submunitions expelled from a larger munition bus, extending their range and speed into target areas. AI-autonomous munitions can produce area effects or engage targets with hit-to-kill precision. The flexibility of AI-autonomous munitions is key. If the munition runs out of energy before acquiring a target, then either it can self-destruct or land to become a mine based on programmed guidance, all based on the munition's assessment of commander's intent, utilizing mission, enemy, terrain, troops, time, and civilian factors. If desired, a munition wolf pack can be programmed to create a minefield for area denial. If range permits, unused munitions can return to friendly areas for recovery and reuse, signaling their return to the appropriate C2 node.[13] The cost savings from recovering and reusing unexpended munitions is obvious. Turning the drones into a minefield once their fuel/energy cell is expended for flight probably constitutes the most cost-effective use of AI-autonomous munitions if return to friendly territory is not possible due to range or EMS countermeasures.

The foremost employment principle for AI-autonomous munitions is mass within target areas to overwhelm threat integrated air defense systems and other countermeasures. AI-munitions are employed in a phased approach to check interdiction and sow destruction on primary, secondary, and tertiary targets. There is no need for manned aircraft or ocean surface vessels when AI-autonomous munitions can be fired from ground-based RAS platforms or subsurface RAS vehicles. These platforms are smaller, cheaper, and expendable. There is no need to expose soldiers or sailors at the tactical edge of battle when an intelligent machine will do and can do the job without bias, fatigue, or human error.

If AI-autonomous munitions are frightening and disconcerting, they should be. War is not for the faint of heart as Carl von Clausewitz reminds us. Ominous weapons and the will to use them constitute deterrence.[14]

Enter AI-Autonomous Weapon Platforms

AI-autonomous weapon platforms operate through an array of onboard sensors like those on AI-autonomous munitions.[15] Sensory input allows the onboard AI to manage and negotiate terrain (or the ocean deep) in all weather conditions, though it is doubtful that climatic conditions factor much into undersea operations.



(Graphic by author)

AI-Autonomous Munitions Operations Overview

Aerial or ocean surface delivery systems are replaced by ground-based and undersea AI-RAS. The paradigm shift away from manned aircraft and surface combat vessels is an obvious cost saver. And just as important, ground-based and undersea AI-RAS provide commanders greater flexibility to engage the enemy in highly contested battlespace, allowing for more effective operations within A2/AD zones to close range gaps or extend munition ranges to gain advantage over threat systems. AI-autonomous weapon platforms are expendable, easier to replace, and do not require training to prepare for combat.

AI-autonomous weapon platforms employ countermeasures against visual, audio, and infrared detection through rapid movement, terrain masking, regulating internal system functions to diffuse heat signatures, or shutting down when not in operation. Ground-based AI-autonomous weapon platforms carry a combination of counter-unmanned aircraft system capabilities such as directed energy (DE) weapons, high-powered microwave (HPM) weapons, guns, low-cost interceptors, and counterdrones.[16] Undersea systems employ acoustic dampeners and countermeasures to include active decoys to confuse or otherwise divert threat sonar.[17]

AI-autonomous weapon platforms are programmed by manned C2 nodes to maneuver within the battlespace to execute assigned missions. This type of AI-RAS assesses and reacts to METT-TC (mission, enemy, terrain and weather, troops and support available–time available and civil considerations) factors within programming parameters to get into the optimal position for target engagement, and then conducts survivability moves, resupply actions, and relocates to other positions to continue assigned missions. Firing solutions are derived onboard the system for the initial launch of AI-autonomous munitions within the system's payload. These are rudimentary calculations to get the munitions clear of the system and onto a heading toward designated target areas. Guidance as to what targets to engage, and when, is sent directly to the munition from the manned C2 node controlling the weapon platform. The AI in the weapon platform interfaces with the AI in the munition to decide the best way to execute received commands.

AI-autonomous weapon platforms contain internal fail-safe controls, which redirect system command

functions, trigger automatic redirection protocols, or cut power in the event programming falters, a sensor suite malfunction occurs, or enemy cyber-electromagnetic activities somehow compromise the system. AI-autonomous weapon platforms manage ammunition, coordinating resupply with sustainment RAS, or manned robotic logistical systems through instructions from manned C2 nodes. Communications occurs through low power, directional radio frequency (RF) once sustainment RAS are within proximity to weapon platforms. Identification and security protocols are executed between systems, ensuring secure and efficient sustainment operations.

The foremost employment principle for AI-autonomous weapon platforms is to minimize communications between C2 nodes and systems to mitigate detection and interdiction, allowing the system to execute independently within programmed guidance. This type of AI-RAS can receive and transmit over extended distance, but predominately operates in receive mode to mitigate its electromagnetic signature. Fire commands are one-way transmissions and treated as such by AI-RAS. Mission fired reports are transmitted by the system through short digital bursts while in movement. If the C2 node fails to acknowledge receipt of reports, AI-RAS continues to transmit at random intervals, but not indefinitely. Complete loss of contact with C2 nodes triggers recall protocols within the system to establish contact at designated rally points.

Sustaining the Fight

While discussing logistics is boring, sustainment operations are essential to employing AI-RAS, requiring discussion. Also, in sustainment operations, AI-RAS might find its greatest application.

Sustainment RAS require interaction with manned logistics systems and personnel at logistics sites. Hardwire communications through a tether facilitate the movement and control of sustainment RAS in restricted terrain, RF-denied environments, or operations in proximity to personnel and equipment. RF control occurs in environments where terrain and/or enemy action permits RF use without compromising force protection. Tethered control is attachable and detachable between manned and unmanned systems, or between sustainment RAS and personnel operating on the ground alongside the system.

Sustainment RAS are programmed and managed by supporting personnel. Sustainment RAS receive control data via RF and/or hardwire, or programming through onboard control panels.

Sustainment RAS operate over extended distances along resupply routes, within battle positions, and at designated logistical resupply points (LRPs) within programming parameters through sensory input processed by onboard AI. Sustainment RAS are equipped with the same sensor suite as AI-autonomous weapon platforms. Sustainment RAS are programmable for independent operations at the tactical edge, linking-up with AI-autonomous weapon platforms for refueling (or recharging) and ammunition transfer/upload. Undersea sustainment RAS link-up with weapon platform counterparts at designated areas along the ocean bed or in open sea at depth for logistics support. Both AI-autonomous weapon platforms and sustainment RAS are hardened against electromagnetic pulse destruction or other electromagnetic spectrum interference to include spoofing, jamming, or hacking. Onboard AI derives the most effective sustainment solutions through system monitoring and analysis without human bias or error to execute logistical operations at designated sites. Sustainment RAS reduce manpower requirements, and enable logistical operations in contested battlespace, exposing fewer soldiers to surveillance and interdiction by direct and indirect fire. Undersea sustainment RAS conducting open sea logistical operations expose no sailors to harm. Sustainment RAS report logistical status at routine intervals, manage internal and external stocks, and coordinate LRP operations directly with AI-autonomous weapon platforms for quick and efficient resupply under all environmental conditions as far forward in the battlespace as possible.

The foremost employment principle for sustainment RAS is resupply in the fight, taking logistics at the tactical edge to the next level with minimal human intervention. The communications package for sustainment RAS is extensive, allowing the system to interface with C2 nodes over extended distance. This type of AI-RAS can have a significant electromagnetic footprint and discernable pattern of life. Countermeasures to surveillance occur through rapid movement, cover, concealment, and randomized LRPs where RF communications cease entirely and the systems involved rely on AI to make all decisions regarding logistical operations by remotely attaching

communications cables, or tethered by sustainment personnel at the location, if operating on land. Ground-based sustainment RAS also contain onboard counter-unmanned aircraft system defeat mechanisms such as DE, HPM, gun, low-cost interceptors, and counter-drones in a combination appropriate to the sophistication of the threat. If programming or sensor malfunction occurs, the sustainment RAS ceases operations and signals for recovery or maintenance support. AI-autonomous maintenance systems (maintenance RAS) are dispatched throughout the battlespace to assess disabled platforms and fix mechanical problems under battle conditions, or recover disabled platforms to higher level maintenance depots if they cannot be repaired in the field or at sea.

Maintenance RAS are one dimensional because of size and mission, executing on command from a C2 node. Maintenance RAS are large with external robotics capable of repairing most AI-autonomous weapon platforms and sustainment RAS mechanical problems. Maintenance RAS maintain stocks of replacement parts. Maintenance RAS link-up with disabled systems by homing in on distress signals and refining their location through electro-optical/infrared sensors. Communications between the disabled platform and the maintenance RAS occurs initially through RF. Once at the disabled system, the maintenance RAS interfaces with the disabled system through its control panel (either by hardwire or RF), running diagnostics and getting into the best position for repair. After repairs are complete, the maintenance RAS transmits reports, discards defective parts, and returns to designated logistical areas to replenish stocks. If repairs cannot be done on the battlefield due to enemy action or the extent of the damage is too great for the programming of the maintenance RAS to fix, or the parts are not on hand to affect repair, then the maintenance RAS attempts to recover the damaged system. If recovery proves impractical or impossible, then the maintenance RAS reports the location of the damaged system to the controlling C2 node and moves on to the next assignment.

Maintenance RAS repair AI-autonomous munitions. In the event the munitions cannot be repaired at the weapon platform, the maintenance RAS recovers defective munitions to higher-level depot.

The foremost operating principle for maintenance RAS is to get to the disabled platform quickly and repair it (or its munitions) on the spot with the least amount of disruption to operations, reducing sustainment footprints by eliminating equipment collection points within contested battlespace. Where sustainment RAS resupply in the fight, maintenance RAS maintain in the fight, achieving a holistic approach to logistical operations at the tactical edge and back.

> “Once at the disabled system, the maintenance RAS [robotic and autonomous systems] interfaces with the disabled system through its control panel (either by hardwire or RF [radio frequency]), running diagnostics and getting into the best position for repair.”

To Control or Not Control

As indicated in the three significant areas of AI-RAS application, the degree of independence varies. Where threat interdiction is greatest because AI-RAS must penetrate A2/AD capabilities deep in contested battlespace, AI-autonomous munitions are enclosed systems fully capable of independent action to identify and destroy designated targets within programming parameters. This is the pinnacle of adaptive, learning, intelligent machine technology capable of decision-making with no external input, relying on its onboard sensor suite and internal circuitry running “learning” algorithms to process terrain and environment, recognize and evade threats, and identify and attack targets. It is optimized to operate in the dark zone when communications are disrupted or nonexistent. Communications between firing system and munition are restricted to programming prior to firing; after that, the AI-munition is on its own.

AI-autonomous weapon platforms receive mission objectives (and limited tactical commands) from

Lance Cpl. Tom Alexander (*center*), a combat engineer with the UK 22nd Engineer Regiment, 8th Engineer Brigade, shows Lt. Col. Jesse Curry (*left*) and Capt. Nick Hyde, both with the 82nd Brigade Engineer Battalion, 2nd Armored Brigade Combat Team, 1st Infantry Division, how to remotely operate a Terrier armored digger during a multinational joint equipment training exercise 2 April 2018 at Grafenwoehr Training Area, Germany, in preparation for a Robotic Complex Breach Concept demonstration. The Robotic Complex Breach Concept includes the employment of robotic and autonomous systems in intelligence, suppression, obscuration, and reduction. (Photo by Spc. Hubert D. Delany III, 22nd Mobile Public Affairs Detachment)

manned C2 nodes. These nodes program the onboard munitions accordingly. AI-autonomous weapon platforms operate with a man-on-the-loop because they require more mission guidance monitoring. This guidance allows the weapon platform to de-conflict its maneuver with other systems, receive fire commands to execute fire missions at precise times, provide redundancy, and coordinate for logistical and maintenance support; therefore, this form of AI-RAS is not an enclosed system. It is required to communicate with other RAS, in particular sustainment and maintenance RAS and manned systems to execute assigned missions and sustain its operations. Once given orders, AI-autonomous weapon platforms conduct independent operations to gain range and engage designated targets within the parameters of programmed guidance and execute resupply functions to maintain mission readiness.

Sustainment and maintenance RAS interface with AI-autonomous weapon platforms, manned robotic logistical systems, and C2 nodes. This form of AI-RAS is the least independent, containing sophisticated multimodal communications capabilities, ultimately utilizing laser and quantum communications technologies. Programmed independent action focuses on traversing terrain, employing countermeasures to detection or engagement, and rendezvousing with AI-autonomous weapon platforms at LRPs on land or at sea to conduct resupply operations or make repairs, and then returning to other logistical areas throughout the battlespace to replenish stocks. Within ammunition holding areas, cache sites, or ammunition exchange points outside battle positions, sustainment RAS operate under the direct control of soldiers or sailors. Yet the overriding employment principle for all AI-RAS is to minimize human intervention at the tactical edge, allowing the systems to function as designed.

AI-RAS are the solution to executing combat operations in a disrupted, degraded, or denied GPS or communications environment. AI-RAS are more lethal. AI-RAS are more efficient. AI-RAS do not fatigue. AI-RAS are faster, stronger, more intelligent, and more rational than humans.

Embracing the HAL 9000 Factor

If the application of AI-RAS proposed in this article seems fantastic, it is not. Currently, IBM's Watson does more than just manage airline maintenance. Watson has moved into operations.[18] Intelligent machines like Watson are steadily moving into areas traditionally seen as the purview of human management. Science fiction is becoming reality. HAL of *2001: A Space Odyssey* is coming just in time for the twenty-first century. Yet the U.S. military continues to invest in GPS-dependent guided munitions, manned platforms (which are logistics intensive), and large numbers of personnel, all geared to maintaining and employing sunset capabilities, which are no match for AI-RAS, or even remote-controlled drones. It should not take a spat between two second-rate powers to illuminate the shifting sands of postmodern warfare, yet here we are.

War is hardnosed practicality. Whatever moral and ethical reservations U.S. policy makers and military leaders may have about the unrestrained use of AI-RAS in warfare will be quickly disabused when our adversaries employ it in mass and without compunction. The debate between realists and moralists is ongoing. As the Center for Security Studies points out,

> the ongoing robotization of armed forces raises questions about the desirability of autonomous systems with lethal capacity. Lethal autonomous weapon systems (LAWs) are understood as fully autonomous weapons that can decide about selecting and engaging targets based on sensor inputs and without human control. Academics, legal scholars, and policymakers are vigorously debating whether the advent of LAWs will bring about a 'robopocalypse' of dehumanized warfare and how this should be prevented.[19]

So while "human control" (which, by the way, is the point of programming) or humanizing the de facto dehumanizing essence of war continues to be debated, the day of unconstrained AI-RAS warfare is coming as the 2020 Nagorno-Karabakh conflict demonstrated.

“Whatever moral and ethical reservations U.S. policy makers and military leaders may have about the unrestrained use of AI-RAS in warfare will be quickly disabused when our adversaries employ it en masse and without compunction.”

Hearkening back to Clausewitz,

> Kind-hearted people might of course think there [is] some ingenious way to disarm or defeat an enemy without too much bloodshed, and might imagine this is the true goal of the art of war. Pleasant as it sounds, it is a fallacy that must be exposed: war is such a dangerous business that the mistakes which come from kindness are the very worst. The maximum use of force is in no way incompatible with the simultaneous use of the intellect. *If one side uses force without compunction, undeterred by the bloodshed it involves, while the other side refrains, the first will gain the upper hand.* That side will force the other to follow suit; each will drive its opponent toward extremes, and the only limiting factors are the counterpoises inherent in war. This is how the matter must be seen. It would be futile—even wrong—to try and shut one's eyes to what war really is from sheer distress at its brutality.[20]

AI-RAS will not make war bloodless. Enemies will aim to draw blood at each other's industrial, agriculture, and energy underbelly—the true center of gravity for any nation. Once the people who make life possible are dead and the associated infrastructure is destroyed, the means to resist is shattered. To presume the advent of AI-RAS will turn warfare into an intelligent machine on intelligent machine melee is folly. Clearing an adversary's

intelligent machines from the battlespace is just the prelude to attacking the center of gravity. AI-RAS jeopardize a nation's center of gravity as never before because intelligent machines are relentless and precise killing machines, taking war to maximum effectiveness and to its logical conclusion without nuclear holocaust.

Professional soldiers and policy makers can debate about what constitutes a center of gravity and the ethics of AI-RAS warfare, but the debate was over before it began. AI-RAS are here, and they are only going to proliferate into the hands of those who do not share in, nor care about, our debate. As Chantal Grut writes in the *Journal of Conflict & Security Law*,

> As weapons technology becomes more and more advanced, humans are moving further and further away from the battlefield. We already live in a world of robotic warfare, in which a pilot sitting in an operating room … can control an unmanned aerial vehicle or 'drone' to conduct lethal targeting operations on the other side of the world. In a sense, weapons development has always been moving in this direction, with the goal of removing human personnel as far from the risk of harm as possible. The next step may remove the human from the process altogether.[21]

This is the logical conclusion of AI-RAS. However, Grut gets it wrong: removing people from risk is not going to happen. The unpleasant truth is humans are more at risk than ever before, both combatants and noncombatants. The machines are not just built to fight other machines. They are built to attack the center of gravity. Joe Strange of the Marine Corps War College got it right, because Clausewitz is right: "Clausewitz clearly allowed for multiple centers of gravity and advised that they should be traced back to a single center of gravity, *if possible*."[22] For nation-states, particularly developed states (peer competitors); food, fuel, and products rule the day. The people who feed society, fuel society, and bring society its daily necessities are the linchpin to life. Attacking that which sustains society brings society to its knees.

Realism drives war. Since Napoleon Bonaparte, warfare has been the "nation in arms," so everyone at the center of gravity is fair game.[23] For one nation to defeat another, war must be taken to its logical conclusion. We should bear in mind, the United States dropped atomic weapons on Japan to shatter that nation in arms and bring the worst world conflagration in mankind's history to a victorious end. In war, there is *no substitute for victory*, and the unmitigated employment of AI-RAS is the next, best, means to victory.

In multi-domain operations, and with the advancement of computational and material sciences, the joint force can capitalize on AI-RAS technologies to achieve much greater warfighting effectiveness as well as operational efficiency with potential cost savings. By grasping AI-RAS potentiality, the joint force becomes an even greater deterrent in competition and a dominating force in conflict, all while utilizing fewer operational resources and less manpower. The time is now to realize the future. The pacing technology of that future is AI-RAS. ■

Notes

1. However, the United States has not won a war since World War II, but I suppose we should aspire to victory, or what is the point of sacrificing blood and treasure? Even Carl von Clausewitz's cynicism allows war to be about more than politics. The primordial hatred that motivates people to fight is the oft less acknowledge aspect of the Clausewitz's unholy trinity. Postmodern men think either they have evolved beyond it or it is too unpleasant to admit. I agree with the psychologists, it is cognitive dissonance—American society's neurosis.

2. David Hambling, "The 'Magic Bullet' Drones Behind Azerbaijan's Victory over Armenia," *Forbes* (website), 10 November 2020, accessed 12 April 2022, https://www.forbes.com/sites/davidhambling/2020/11/10/the-magic-bullet-drones-behind--azerbaijans-victory-over-armenia/?sh=d77fa475e571; Robyn Dixon, "Azerbaijan's Drones Owned the Battlefield in Nagorno-Karabakh-and Showed Future of Warfare," *Washington Post* (website), 11 November 2020, accessed 12 April 2022, https://www.washingtonpost.com/world/europe/nagorno-karabkah-drones-azerbaijan-aremenia/2020/11/11/441bcbd2-193d-11eb-8bda-814ca56e138b_story.html; Shaan Shaikh and Wes Rumbaug, "The Air and Missile War in Nagorno-Karabakh: Lessons for the Future of Strike and Defense," Center for Strategic and International Studies, 8 December 2020, accessed 12 April 2022, https://www.csis.org/analysis/air-and-missile-war-nagorno-karabakh-lessons-future-strike-and-defense. Table 2, CSIS table: Azerbaijan's missiles, drones, and rocket artillery–the Harop is a SEAD-optimized loitering munition that operates in autonomous or "man-on-the-loop" mode; the Bayraktar TB2 is capable of autonomous flight or remote control; the Orbiter 1K and -3 are remote-controlled loitering munitions capable of independent flight and attack; SkyStriker is a fully autonomous unmanned aircraft system (UAS) that can locate, acquire, and strike operator-designated targets with a 5kg warhead installed inside the fuselage; the Hermes-900 and

-450 are medium-altitude, long endurance UAS that are remote controlled; and Heron (Machatz-1) is another medium-altitude, long endurance UAS controlled by remote. All these drones were used in varying numbers by the Azerbaijanis, and whether in fully autonomous mode or controlled by remote (man-on-the-loop), their use was not just effective, but devastating—the game changer in the war. The evidence is before us.

3. David Hambling, "The 'Magic Bullet' Drones Behind Azerbaijan's Victory over Armenia"; Robyn Dixon, "Azerbaijan's Drones Owned the Battlefield in Nagorno-Karabakh-and Showed Future of Warfare."

4. "U.S. Army Futures Command Character of Warfare 2035 Seminar," assessment by Alexander Kott, PhD, Chief Scientist, US Army Combat Capabilities Development Command's Army Research Laboratory (17 November 2020).

5. Stanly Johny, "Explained: Who Won the War Over Nagorno-Karabakh," *The Hindu* (website), 18 November 2020, accessed 12 April 2022, https://www.thehindu.com/news/international/explained-who-won-the-war-over-nagorno-karabakh/article33125724.ece; Dumitru Minzarari, "Russia's Stake in the Nagorno-Karabakh War: Accident or Design?," German Institute for International and Security Affairs, 11 December 2020, accessed 12 April 2022, https://www.swp-berlin.org/en/publication/russias-stake-in-the-nagorno-karabakh-war-accident-or-design; Andrew Osborn, "Russia Says Islamist Fighters in Nagorno-Karabakh Conflict Pose Threat to Moscow," Reuters, 6 October 2020, accessed 12 April 2022, https://www.reuters.com/article/us-armenia-azerbaijan-russia/russia-says-islamist-fighters-in-nagorno-karabakh-conflict-pose-threat-to-moscow-idUSKBN26R1WE; Fred Weir, "Russia Losing Its Influence? Nagorno-Karabakh Fighting Test Limits," *The Christian Science Monitor* (website), accessed 12 April 2022, https://www.csmonitor.com/World/Europe/2020/1008/Russia-losing-its-influence-Nagorno-Karabakh-fighting-tests-limits; Richard Giragosian, David Lewis, and Graeme Herd, "Russian Crisis Behavior, Nagorno-Karabakh and Turkey?," *Perspectives*, no. 19 (January 2021), accessed 12 April 2022, https://www.marshallcenter.org/en/publications/perspectives/russian-crisis-behavior-nagorno-karabakh-and-turkey-0.

6. "U.S. Army Futures Command Character of Warfare 2035 Seminar."

7. Alexander Kott and David Albertsm, "How Do You Command an Army of Intelligent Things?," *Computer* 50, no. 12 (2017): 96–100, https://doi.org/10.1109/MC.2017.4451205.

8. "Operationalizing Robotic and Autonomous Systems in Support of Multi-Domain Operations White Paper" (Fort Eustis, VA: Army Capabilities Integration Center–Future Warfare Division, 30 November 2018).

9. IBM Cloud Education, "Artificial Intelligence (AI)," IBM Cloud Learn Hub, 3 June 2022, accessed 13 April 2022, https://www.ibm.com/cloud/learn/what-is-artificial-intelligence. This definition is not my slant on AI. According to computer experts, "artificial intelligence leverages computers and machines to mimic the problem-solving and decision-making capabilities of the human mind." So says IBM. According to futurists, "the reality is we're creating God." Blasphemous, but bold, and as the folks over at Futurism warn, AI development is "the inevitable birth of a vengeful god"; Dan Robitzski, "Former Google Exec Warns that AI Researchers are 'Creating God,'" Futurism, 29 September 2021, accessed 27 April 2022, https://futurism.com/the-byte/google-exec-ai-god. How comforting.

10. AI-autonomous munitions can be monitored and directed when communications exist. When communications are disrupted, the munitions hunt autonomously within programmed guidance, reverting to a fully enclosed posture. Preferably, decisions to enclose the system or establish communications links to outside nodes are taken prior to launch. An enclosed posture prevents electromagnetic spectrum interdiction. The optimal method of engagement is for the munitions to launch enclosed, communicating only with one another to hunt as a wolf pack.

11. Dominika Kunertova, "From Robots to Warbots: Reality Meets Science Fiction," *CSS Analyses in Security Policy*, no. 292 (October 2021), accessed 12 April 2022, https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/pdfs/CSSAnalyse292-EN.pdf.

12. Wolf pack hunting replicates the same single-minded ruthlessness and efficiency with which wolves take down prey in coordinated action, recognizing only members of the pack; hence the descriptor. AI deciphers incoming communications transmissions, distinguishing between encoded transmissions from other drones within the wolf pack and outside transmissions from other sources. Optimally, AI-munitions are instructed prior to launch to ignore all transmissions external to the pack. Once the enclosed posture is chosen or invoked, it is a lock. The munition hunts until it runs out of energy, either self-destructing, becoming a mine, or returning to friendly territory for recovery (if range permits).

13. This option is not applicable to AI-munitions expelled as sub-munitions from a rocket or missile. Recovery is for runway independent systems or larger munitions delivered independently from a weapon platform onto specified targets. These drones return to ground by parachute.

14. *Oderint dum metuant*—Lucius Accius (Let them hate as long as they fear). The Romans understood deterrence.

15. Subsurface remote autonomous systems (RAS) predominately use sonar until the next innovation in undersea navigation comes along.

16. Counter-drones interdict unmanned aircraft systems through aerial combat.

17. Active decoy drones deploy from the primary undersea AI-RAS to make tracking the primary system difficult, if not impossible. These decoys overcome sonar through flooding it with returns, producing acoustics easily confused with marine life, seismic activity, or surface vessels, or mimicking the primary system's signature to lead tracking systems away from its course.

18. Roger Mogford and Christopher Codella, "Using IBM's Watson in the Airline Operations Center," AMES Research Center, accessed 13 April 2022, https://human-factors.arc.nasa.gov/groups/AORG/download/Watson_Flight_Ops_v2b.pdf.

19. Kunertova, "From Robots to Warbots."

20. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 75–76. (emphasis added)

21. Chantal Grut, "The Challenge of Autonomous Lethal Robotics to International Humanitarian Law," *Journal of Conflict & Security Law* 18, no. 1 (2013): 5–23, https://doi.org/10.1093/jcsl/krt002.

22. Joe Strange, *Centers of Gravity & Critical Vulnerabilities: Building on the Clausewitzian Foundation So That We Can All Speak the Same Language*, Marine Corps University Perspectives on Warfighting No. 4, 2nd ed. (Quantico, VA: Marine Corps University, 1996), xv, accessed 12 April 2022, https://apps.dtic.mil/sti/pdfs/ADA502026.pdf.

23. Hugh Nibley, *Brother Brigham Challenges the Saints*, ed. Don E. Norton and Shirley S. Ricks (Salt Lake City: Deseret Book, 1994), 295.

A German firing squad executes Soviet partisans on the eastern front September 1941 during World War II. (Photo courtesy of the German Federal Archive via Wikimedia Commons)

Duty Should Not Be an Army Value

Charles J. Duncan

Edwin Stanton, Abraham Lincoln's secretary of war, once received in his office the mother, wife, and children of a deserter. At the time, the typical sentence for desertion was death since any amount of leniency was thought to encourage other soldiers to desert as well. The family pleaded for the life of their loved one while Stanton stood "in cold and austere silence," and "at the end of their heart-breaking sobs and prayers answered briefly that the man must die." Historian Doris Kearns Goodwin describes what happened next, from the point of view of Stanton's clerk:

> The crushed and despairing little family left and Mr. Stanton turned, apparently unmoved, and walked into his private room." The clerk thought Stanton an unfeeling tyrant, until he discovered him moments later, "leaning over a desk, his face buried in his hands and his heavy frame shaking with sobs. 'God help me to do my duty; God help me to do my duty!' he was repeating in a low wail of anguish."[1]

Stanton epitomizes duty, defined by the Army as "fulfilling one's obligations," and whether he was right to decide on execution, his evident compassion and moral fortitude deserve our admiration.[2] But when we consider which virtues should be a part of our core values, we should not allow emotionally compelling stories like this one to cloud our moral judgment. There is a dark side to duty that is not often discussed in the armed services, and it should cause us to question whether it should be included in the seven Army Values that are taught to incoming recruits. We will return to Stanton after we have examined the arguments against duty more fully.

Duty Is Logically Unnecessary

The case against duty rests on three arguments: (1) duty is philosophically superfluous, (2) duty can morally blind us, and (3) duty can overpower conscience. Let us start with the first argument.

Suppose a soldier is ordered to kill innocent civilians by a superior. Most ethicists would probably agree that this soldier should refuse such an order; we might say they have a duty to disobey. But the only way to reach this conclusion is to apply moral values other than duty, because if we rely on duty alone, we are simply presented with two mutually exclusive obligations—the duty to obey orders generally, and the duty to disobey immoral ones—with no way to adjudicate between them. This renders duty as a moral value logically unnecessary. If the ethics of duty are entirely contingent upon the application of other values, why not just skip the middleman and appeal directly to the moral principles that can stand on their own?

For example, it is generally unnecessary to ask oneself if an action is too selfless or too respectful from a moral point of view. Rather, in almost all possible scenarios, it is safe to assume that the more selfless, more respectful action is the right one.

But this first argument against duty could perhaps be used against values like personal courage and integrity. After all, many soldiers have fought bravely for the wrong side of a conflict, and most people would probably consider it immoral to truthfully inform the slave catcher that there is an escaped slave hiding in the cellar. However, an important difference distinguishes courage and integrity from duty: these values do not cloud our judgment in the same way that duty does. In fact, courage and integrity are sometimes necessary to admit to ourselves that what we are doing is wrong, whereas duty, as we will see in the next section, often works to discourage moral deliberation.

This abstract discussion is not merely academic; duty's essential neutrality with respect to the rightness or wrongness of orders has consequences in the real world because when flawed human beings are presented with mutually exclusive obligations, they sometimes resolve their confusion by defaulting to whichever duties seem easiest to fulfill at the time, especially if they are tired, hungry, short on time, worried about their careers, influenced by peer pressure, or facing conditions of uncertainty. Even in cases where these more proximate factors are not in play, the same impulse to choose the easier wrong can result from bureaucratic inertia, lack of self-reflection, or just ordinary laziness.

Consider Adolf Eichmann, who was hanged for crimes against humanity—that is, mistakenly choosing his legal duty to organize the transportation of Jews to extermination camps over his moral duty not to help kill innocent people.[3] According to the philosopher Hannah Arendt, one important insight to be gleaned from his trial was that "so many were like him [Eichmann], and that the many were neither perverted nor sadistic, that they were, and still are, terribly and terrifyingly normal."[4] Eichmann told the police and the court repeatedly that "he did his duty … [that] he not only obeyed *orders*, he also obeyed the *law*."[5]

We should not make the mistake of assuming, simply because they are

Charles J. Duncan graduated from the U.S. Military Academy at West Point and went on to serve with the 10th Mountain Division and the 66th Military Intelligence Brigade. He also completed a deployment to Paktiya and Logar Provinces, Afghanistan, in 2013–2014 for Operation Enduring Freedom.

American rather than some other nationality, that American soldiers are incapable of acting similarly if they are told by their superiors that it is their duty. Indeed, the political theorist Michael Walzer has described how people apparently differ greatly in their predispositions to following immoral orders. At My Lai, where American soldiers massacred hundreds of unarmed Vietnamese civilians, the soldiers fell into several camps; some ran or resisted for a period of time, some even interposed themselves to stop the slaughter, but a number of them joined the murders "readily enough, as if eager to kill without risk."[6]

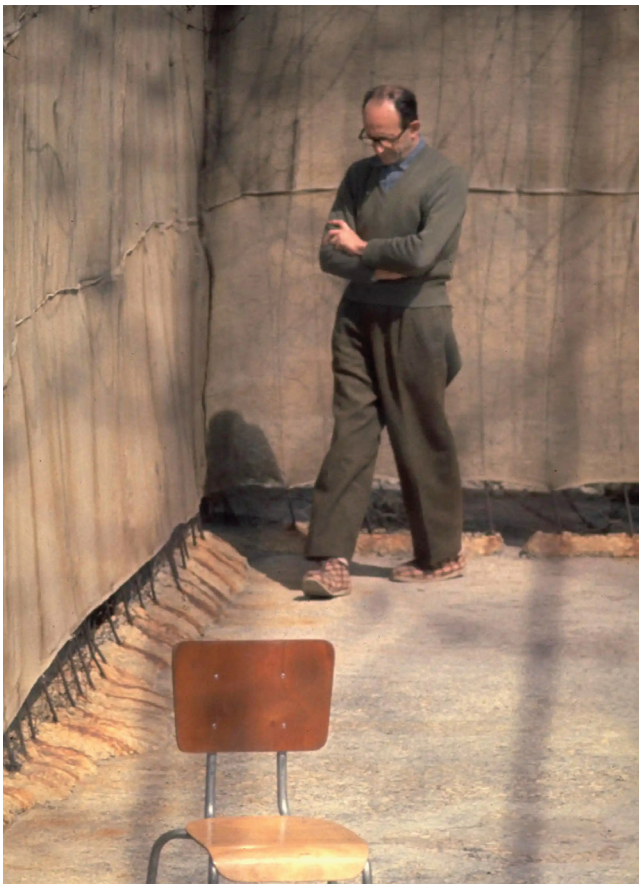
Furthermore, the Eichmann case shows us why invoking Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession*, and advising soldiers to refuse illegal orders or to seek legal advice for complex questions is not always helpful and may even backfire.[7] Eichmann felt his behavior was defensible precisely because it was legal. The other common injunction from ADP 6-22, to refuse immoral and unethical orders, is essential, of course, but not especially helpful for deciding what to do in a specific circumstance because in war it is often not so clear what the moral choice is.[8] This brings us to the second argument against duty.

Duty Is Morally Blinding

We have seen how even relatively normal people, if they don't think carefully enough, can choose the wrong duty; now we arrive at the second argument: that duty can, without our knowledge, blind us to the many psychological tendencies that lead to unethical behavior. Let's examine a few of those tendencies.

One we might call *gradualism*: the tendency to commit greater and greater wrongs one small step at a time. For example, the Harvard psychologist Steven Pinker points out that the Nazis did not implement their "Final Solution" right away; first there was political disenfranchisement, harassment, ghettoization, and then deportation. It is easier to commit an evil act if it is not so different from what is already common practice.[9]

Gradualism exerts its power not only on people like the architects of the Final Solution but also on individual criminals and government employees charged with carrying out orders. Roy Baumeister, a psychology professor at the University of Queensland, describes how rapists, institutional torturers, Mafia hitmen, and even soldiers



Nazi war criminal Adolf Eichmann walks in the yard of his cell 21 April 1961 in Ayalon Prison, Ramla, Israel. (Photo courtesy of the National Photo Collection of Israel via Wikimedia Commons)

can sometimes become addicted to killing and hurting people in much the same way that people become addicted to drugs. Several serial killers got their start in Vietnam after discovering how enjoyable it could be to kill other people.[10] This cannot be easily explained away by faulty genes or mental illness since some cultures and eras produce far more serial killers than others.[11]

Another tendency is our willingness to displace responsibility when we are part of a system in which each individual has only a small part to play in the overall outcome. Baumeister illustrates the point by noting that during the Spanish Inquisition, Catholic clergy decided sentences, but secular authorities carried them out; that way, both the inquisitors and the executioners could sleep soundly at night.[12]

The Stanford neuroscientist Robert Sapolsky describes another example, this time proving that bureaucratic distance is not always necessary for this human defense mechanism to kick in. The reason that firing

An auto-da-fé (a public ceremony at which sentences were pronounced) of the Spanish Inquisition and the burning of heretics on the stake in a marketplace. (Wood engraving by Bocort after H.D. Linton via Wikimedia Commons)

squads tend to be composed of five executioners is that each member becomes less likely to object to a killing if he believes that his bullet alone may not have been lethal or may even have missed completely. The smartest autocrats, Sapolsky adds, have even learned that randomly assigning one blank round to each execution enhances efficiency still further, precisely because it gives each member of the firing squad a way to excuse his own behavior.[13]

Finally, researchers have found that since the human brain functions in large part by categorizing objects and assigning qualities to them, we find it quite natural to recategorize each other—and even ourselves—as something other than free agents with similar hopes and fears.[14] For example, during war, many soldiers categorize their adversaries as "targets," "the enemy," or even "gooks" or "hajjis."[15] This probably makes it easier to kill them during battle. Baumeister relates an instance, though, that demonstrates that this mental categorization can be flipped under the right conditions. During the Spanish Civil War in the 1930s, the famous writer and moralist George Orwell was about to fire on a fascist soldier who was relieving himself in no-man's land. When Orwell's fellow soldiers opened fire on the fascists, the man Orwell was aiming at fled while using both hands to hold up his trousers. Orwell admitted later that he could not bring himself to shoot at the man because "a man who is holding up his trousers is not a 'fascist.' He is visibly a fellow creature."[16] The story is instructive because it reveals how the default way of viewing someone on the opposing side of a conflict is *not* as a fellow creature but as something less than fully human.[17]

This tendency to dehumanize other people has been proven in numerous experiments. To give just one example, psychologist Albert Bandura, a professor emeritus at Stanford University, was able to increase how much his subjects administered electric shocks to people of a different ethnic group simply by allowing them to overhear one experimenter derogating the group as "animalistic."[18]

It is even possible to recategorize ourselves. Anthropologist Napoleon Chagnon, who spent decades living with the Yanomamo in the Venezuelan Amazon, wrote that before a raid, his hosts would undergo a frightening, eerie ritual wherein the warriors would scream and growl like carnivorous animals.[19] After the raid, any *unokai* (men who had killed another man during the raid) would undergo a purification ceremony followed by ritual confinement.[20] Both of these kinds of rituals formally separate a soldier into two identities: the peaceful, innocent civilian; and the ferocious, morally compromised killer. Although modern armies do not employ rituals quite like these, they do employ other means of accomplishing the same thing. For example, shaving recruits' heads during Basic Training, standardizing uniforms, enforcing strict rank hierarchies, and the once common practice of "hazing rituals" all partly serve to enforce the mental categorization switch of an innocent, individualistic civilian to a member of a lethal collective. But there is a downside to exploiting this part of our psychology: one study indicated that traditional human societies that adopt a standard battle dress are more likely to torture and mutilate their enemies than ones that do not.[21] Sapolsky suggests that the goal of such deindividuation practices is not so much to ensure that the enemy won't be able

to recognize you afterward so much as "to facilitate moral disengagement so that *you* won't be able to recognize you afterward."[22]

The point of all these experiments and examples is not to show that duty always causes people to act unethically, nor to equate the U.S. Army with the *Schutzstaffel* (SS) or tribal warriors, but rather to show how the human moral sense can be disengaged or even co-opted for evil ends when a task is perceived to be a duty. Instead of acting as a check on immoral behavior, as integrity and courage do, the historical and experimental record suggests that a sense of duty is often a prerequisite for it.

> The experiment revealed a disturbing truth: that most people will torture an innocent human being to death as long as they are coaxed on by an authority figure.

Duty Trumps Conscience

The final argument against duty considers not just when duty opens the door to unwitting evil, but when duty causes decent, ethical people—who have correctly perceived the wrongness of an act—to go ahead and do it anyway.

In the early 1960s, an assistant professor at Yale University named Stanley Milgram set up an experiment in which "teachers," led to believe they were assisting the experimenters in a scientific study on how punishment affects learning, read word pairs aloud to "learners," who unbeknownst to the teachers were actually confederates of the experimenters. The teachers then tested the learners on how well they had supposedly memorized the word pairs. Every time a learner answered incorrectly, the teachers were supposed to administer an electric shock, with the voltage increasing with each wrong answer. The teacher and learner were physically separated so that the teachers could not tell that the "answers" they were really hearing were prerecorded sounds corresponding to different shock levels. As the voltage increased, the teachers heard the "learners" audibly protesting, banging on the walls, and eventually falling completely silent. Crucially, an experimenter stood by observing the teacher's performance and instructing them to continue if they paused to question what they were doing.[23]

The experiment revealed a disturbing truth: that most people will torture an innocent human being to death as long as they are coaxed on by an authority figure. Although many subjects became visibly distressed at the learners' pleas ("Experimenter, get me out of here! I won't be in the experiment any more! I refuse to go on!"), 80 percent of them continued the shocks at least past the point where the learners' cries became "agonized screams" (270 volts, the setting that bore the warning: "Intense Shock"), 65 percent continued past the point where the learner stopped providing answers (labeled "345 volts—Extreme Intensity Shock"), and 62.5 percent kept shocking the learner's presumably dead or unconscious body all the way to the final voltage setting (labeled "450 Volts—XXX") before the experimenters finally intervened to end the experiment.[24]

This result belied the predictions of professional psychiatrists and behavioral scientists, who told Milgram through a survey that they believed only 1–2 percent of subjects would continue the experiment all the way through the final shock. If even the experts grossly underestimate how far other people will go to avoid disobeying authority figures, we can assume that the rest of us are hopelessly apt to make the same mistake—and to an even greater extent when predicting our own behavior.[25]

Jerry Burger, a professor at Santa Clara University, replicated Milgram's experiments in 2008, confirming that the dutiful part of our nature that urges us to obey immoral orders is still very much with us. While Burger appropriately recommends caution when extrapolating his laboratory results to the more complicated world outside the ivory tower, Milgram's classic studies were nevertheless granted real-world validation by American soldiers in Iraq, whose behavior we turn to next.[26]

A Modern Case Study

It could be said that, so far, the case against duty fails because American soldiers fight in just wars and are trained on how to apply the law of war in an ethical way. But this would be a mistake.

In 2004, the world learned how detainees were treated at the American detention facility Abu Ghraib. According to Maj. Gen. Antonio Taguba's AR 15-6 investigation, detainees were beaten, piled naked on top of one another, forced to masturbate for cameras, and subjected to numerous other forms of abuse.[27] A few

Detainee Abdou Hussain Saad Faleh stands on a box with bag over his head and wires attached to his hands 4 November 2003 in Abu Ghraib prison, Iraq. (Photo courtesy of the U.S. Army Criminal Investigation Command)

incidents veer into even more extreme territory: one detainee was sodomized with a chemical light, and another was asphyxiated (albeit accidentally) in a manner similar to a crucifixion or strappado hanging—that is, suspended by the shoulders with hands tied behind the back.[28]

The Abu Ghraib case bears a disquieting resemblance to the historical atrocities we encountered earlier, particularly with respect to the corrupting influence duty had on the participants. For instance, we see diffusion of responsibility between soldiers who believed they were following orders and lawyers who probably never stepped foot in an interrogation room. We also see confusion about which mutually exclusive duties to fulfill, extending from the enlisted military police all the way to the general officers. Lt. Gen. Ricardo Sanchez, the Combined Joint Task Force 7 commander, asked his staff at the time, "How do we ensure that we have the right mechanisms in place that allow our interrogators to push the limit of our authorities yet prevent a violation of the Geneva Convention and our duty to treat detainees humanely?"[29] He also noted, correctly, that field manuals and doctrine had little to say about how to resolve the conflict because the relevant ethical issues were "beyond the scope" of such documents.[30] The enlisted soldiers expressed their confusion as well; Spc. Megan Ambuhl lamented, "You're taught from the very beginning that you have to follow your orders, and if you don't you're going to get in trouble … And if you do, obviously you'll end up in trouble if someone finds out and they didn't like the orders that you were given."[31]

Contrary to what Ambuhl implies, there is no evidence that any orders or policy guidance from the soldiers' superiors explicitly instructed them to pile the naked detainees into a human pyramid, lead them by a leash around the neck, or force them into sexually explicit positions, to say nothing of physical and sexual assaults.[32] But if we extend a modicum of charity to the soldiers' perspective, it is not so hard to understand why many of them felt bewildered by the institutional backlash to their behavior. For one thing, they worked alongside both military intelligence soldiers and Central Intelligence Agency officers as they "set physical and mental conditions" for interrogations, and it was not unreasonable to suppose that experienced CIA interrogators knew better than they did what was permitted and what was not.[33] For another, we should note that Department of Defense policy *did* at one point authorize the use of stress positions, removal of clothing, and hoods on detainees, although the use of "scenarios designed to convince the detainee that death or severely painful consequences are imminent" was only deemed "legally available."[34] If we apply this standard to the most infamous photograph from Abu Ghraib, of a man standing on a box, hooded, with his

arms outstretched and electrodes in his hands, then the soldiers' actions were *morally* permissible; the problem is that they didn't verify that the interrogators had the authorization they claimed to have—a bureaucratic oversight rather than a gross human rights violation.

Here, too, we see the pernicious effects of gradualism come into full force. Spc. Sabrina Harman describes the gradual way in which the soldiers came to dehumanize the detainees:

> In the beginning you see somebody naked, and you see underwear on their head, and you're like, Oh, that's pretty bad—I can't believe I just saw that. And then you go to bed and you come back the next day, and you see something worse. Well it seems like the day before wasn't so bad.[35]

For soldiers who are tired, under near-daily bombardment, severely underresourced, and untrained, it is not obvious that putting naked detainees in stress positions every day, putting hoods over their heads, yelling at them, and finding creative ways to humiliate and terrify them is all acceptable—obligatory—but putting these same detainees into a pile and taking a picture is suddenly a despicable criminal offense.[36]

Finally, and most poignantly, we see the agonizing surrender of conscience to duty in Harman's letters home, which express her inner turmoil even as she reluctantly participates in the abuse.[37] Harman was convicted, in a bit of cosmic irony, of dereliction of duty.[38]

Of course, many factors other than duty contributed to the abuse, including the lack of officer supervision at the prison, dysfunctional command relationships at upper echelons, and the presence of largely unaccountable contractors.[39] But in war, it should be expected that leaders will be stretched thin, supplies scarce, and organization haphazard. These considerations do not obviate the Army's responsibility to do everything it can to ensure soldiers behave ethically even when no one is watching, nor should they cause us to conclude that Abu Ghraib was the result of unusually bad luck.

On the contrary, the bipartisan Senate Armed Services Committee Report on Abu Ghraib in 2008 concluded explicitly that the cause of the abuses was not "a few soldiers acting on their own"; it was that policies made further up the chain of command set a standard for how detainees could be treated, and a moral "erosion in standards" ensued.[40] Dr. Philip Zimbardo, an eminent Stanford University psychology professor who was asked to testify on behalf of the perpetrators, fleshes out this idea more. Based on his work and the work of other psychologists, Zimbardo argued that most people who find themselves in a place like Abu Ghraib will cave to the situational forces that impel them to commit evil: "It's the exceptional person, the heroic person who can somehow resist."[41] Perhaps that is why dozens of people participated in or ignored the abuse rather than report it.[42]

Is Duty Indispensable?

There are a few ways to argue that the Army should continue to consider duty one of its core values. First, some might argue that the word itself is not really understood by any reasonable person to be sanctioning immoral behavior. It would be needlessly pedantic to anticipate every possible way a definition could be misconstrued and then append all the qualifications necessary to refute them. But this objection does not really account for how human beings make decisions. Cultural psychologists have shown that people often make subconscious decisions by asking themselves, "Is this the kind of place where people do X?"[43] If an organizational culture successfully propagates the idea that it is a virtue to "do your duty," then it is implicitly understood that refusing to do your duty is wrong. Teenagers who find themselves in a situation like Abu Ghraib may subconsciously ask themselves, "Is this the sort of place where people are encouraged to voice their dissent, or is it the sort of place where people are expected to follow orders?"

Another argument is that without a sense of duty drilled into new soldiers, units will descend into anarchy and inefficiency as subordinates stop to question every order issued by their superiors. This is a dubious claim. As the examples provided above should make clear, the experimental and historical evidence strongly suggests that people are by nature far too dutiful rather than too rebellious, and many other kinds of organizations manage to foster a sense of mission and esprit de corps without extolling the virtues of duty.

However, some traditionalists may argue that the Army is unique—most corporations do not expect their employees to dodge bullets or improvised explosive devices—and so a sense of duty is indispensable for military soldiers. But this might be a case of the focusing

illusion, what Daniel Kahneman, Nobel Laureate in Economics, coined our tendency to exaggerate the importance of ideas while we happen to be thinking about them.[44] In other words, when we ponder duty in a safe classroom, we may tend to overstate just how much it matters to someone who is being shot at. In his aptly titled book *What It Is Like to Go to War*, Karl Marlantes describes several more prosaic motivations for soldiers in combat, like self-preservation, unthinking reflex, fear of the consequences of disobeying, and even pleasure.[45]

Center in 2001 and during Hurricane Katrina in 2005.[47] Apparently, we do not need to be indoctrinated with any formal code in order to act altruistically because, as some psychologists have argued, it is already coded into our DNA.[48]

So, is duty indispensable? Unless its defenders can make a convincing argument that units will perform worse in combat and commit more war crimes if they go out of their way to encourage respectful dissent instead of dutifulness, then the answer seems to be no.

“There’s a dark side to this surrender [to duty], however. You impair, and in some cases lose altogether, your ability to make sound judgments.”

Notably, his treatment of duty as a motivation is deeply ambivalent. He writes:

> There’s a dark side to this surrender [to duty], however. You impair, and in some cases lose altogether, your ability to make sound judgments as an individual, whether in the mud of war with all these frightened kids around you or in the battle for corporate survival. You are far more likely to engage in groupthink. You are far more likely to go along with the bad assumptions, the wrong perceptions of reality. The primary reason for this abandonment of the individual viewpoint is simply that with so much pain and grief going on, who would want to make individual judgments? This would entail taking responsibility for the pain.[46]

Our natural inclination, it seems, is to be blindly dutiful at precisely the moments we most need to be thinking clearly.

Also, history shows that even untrained civilians who were never part of a dutiful culture usually prove themselves just as capable of heroics when the circumstances warrant it. For example, ordinary human beings consistently risked their lives to help strangers during the Blitz of London, and more recently the Federal Emergency Management Agency has actually expressed concern that *too many* untrained volunteers rushed to help during the attack on the World Trade

What Is to Be Done?

Cultural change cannot be brought about overnight, but as long as Army recruits are expected to learn the Army values in basic training, regurgitate them at promotion boards, and incorporate them into their personal ethical codes, the Army will continue to perpetuate moral confusion and increase the likelihood of misjudgments on the battlefield.

The best course of action would be to entirely abolish the seven core Army Values and start from scratch. In addition to the arguments presented here against making duty an official virtue, Lt. Col. (Ret.) Pete Kilner, the chair of character development at West Point, has convincingly argued that loyalty is also overvalued; it is no accident, in Kilner’s view, that loyalty happens to be the favorite virtue of despots and criminal bosses around the world.[49] In another edition of the same magazine, I reviewed the work of psychologists, political scientists, and sociologists who consistently find that people raised in a culture that values honor also tend to be more prone to unjustified violence, including not only bar-goers who fight over parking spots but also presidents making decisions about war and peace.[50] The Army has changed its values at least three times in the last half century, so if three of the Army’s seven core values are on questionable ground, perhaps it is not so radical to change them once more.[51]

Another option for change, less preferred but far more politically and logistically feasible, is adjusting the Army’s

official conception of duty and the way it trains its soldiers. Perhaps "fulfill your obligations" could be replaced with "fulfill your obligations, to your team and to yourself." This would convey the importance of listening to one's conscience rather than blindly obeying questionable orders. The rest of the definition should not emphasize teamwork quite so much—peer pressure and diffusion of responsibility, as we have seen, is a powerful motivator for unethical behavior, and human beings find that teamwork comes naturally anyway—but should include a sentence about acting ethically even when it is hard.[52]

The existing ethics training material produced at the Center for the Army Profession and Leadership appropriately covers the three main schools of ethics: virtue ethics, utilitarianism, and deontology (rule-based ethics).[53] However, the curriculum could be improved if it also included experiments like Milgram's and case studies like Abu Ghraib. Classroom instruction that relies on obviously contrived scenarios will not capture an audience's attention as fully, nor evoke as much self-reflection, as real-world examples; and bullet points that describe our psychological biases will be met with skepticism or apathy unless they are accompanied by the often-fascinating scientific evidence that supports them.

Stanton Revisited

I have tried to make the case that duty is at best an unhelpful moral guide, and at worst a justification for atrocities. But if it is so harmful, what are we to make of people like Stanton? What sets them apart cannot be duty because many people fulfill their (perceived) obligations with gusto, whether they are power-hungry bureaucrats, religious fanatics, cutthroat CEOs, terrorists—and yes, even soldiers carrying out immoral orders. Stanton, however, freely chose to commit himself to the right cause, namely preserving the Union and abolishing slavery, and then he worked himself nearly to collapse in defense of it. What we admire about him is not his deference to Lincoln's authority—in fact, he was quite outspoken about his disagreements with the president—but his profound compassion for his fellow human beings, his resolve in the face of physical exhaustion and emotional anguish, and his sound moral judgment.[54]

What constitutes good moral judgment is a very difficult question, but we do know that "duty" offers us nothing toward the attainment of it, and any military or political leader who finds that they cannot inspire soldiers' devotion to a mission, except by appealing to duty, should ask themselves if the mission in question is really justifiable.

Meanwhile, the question Army ethicists should ask themselves is: Which virtues or principles are not entirely contingent upon the application of others? And which ones tend to illuminate moral questions rather than muddy them? Some values, like selfless service and integrity, pass this test. Duty does not. ■

The views expressed here are those of the author and do not represent those of Military Review, *the Army University Press, the U.S. Army, or the Department of Defense.*

Notes

1. Doris K. Goodwin, *Team of Rivals: The Political Genius of Abraham Lincoln* (New York: Simon & Schuster, 2005), 671.
2. "The Army Values," Army.mil, accessed 25 April 2022, https://www.army.mil/values/.
3. *Encyclopedia Britannica Online*, Academic ed., s.v. "Adolf Eichmann," accessed 22 February 2022, https://www.britannica.com/biography/Adolf-Eichmann.
4. Hannah Arendt and Amos Elon, *Eichmann in Jerusalem: A Report on the Banality of Evil* (London: Penguin Books, 2006), 276.
5. Ibid., 135.
6. Michael Walzer, *Just and Unjust Wars* (New York: Basic Books, 1977), 310.
7. Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: U.S. Government Publishing Office [GPO], 25 November 2019), 1-3–1-4, accessed 22 February 2022, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN20039-ADP_6-22-001-WEB-0.pdf.
8. Ibid., 1-4.
9. Steven Pinker, *The Better Angels of Our Nature: Why Violence Has Declined* (New York: Viking Penguin, 2011), 566.
10. Roy Baumeister, *Evil: Inside Human Violence and Cruelty* (New York: W. H. Freeman, 1997), 345.
11. Ibid., 345–46.
12. Ibid., 496.
13. Robert Sapolsky, *Behave: The Biology of Humans at Our Best and Worst* (London: Penguin Random House, 2017), 472.
14. Steven Pinker, *How the Mind Works* (New York: Penguin Books, 2015), 306–13.
15. Pete Kilner, "Know Thy Enemy: Better Understanding Foes Can Prevent Debilitating Hatred," *Army* 67, no. 7 (July 2017), accessed 31 May 2022, https://www.ausa.org/articles/know-thy-enemy.
16. Baumeister, *Evil*, 318.
17. Ibid., 318–19.

18. Albert Bandura, Bill Underwood, and Michael E. Fromson, "Disinhibition of Aggression through Diffusion of Responsibility and Dehumanization of Victims," *Journal of Research in Personality* 9 (1975): 259, accessed 25 April 2022, http://www.uky.edu/~eushe2/Bandura/Bandura1975.pdf.

19. Napoleon Chagnon, *Noble Savages: My Life Among Two Dangerous Tribes—The Yanomamo and the Anthropologists* (New York: Simon & Schuster, 2013), 82–84.

20. Ibid., 92.

21. Sapolsky, *Behave*, 473.

22. Ibid.

23. Stanley Milgram, *Obedience to Authority: An Experimental View* (New York: HarperCollins, 2009), 17–23.

24. Ibid., 23, 24, 34.

25. Ibid., 31.

26. Jerry Burger, "Replicating Milgram: Would People Still Obey Today?," *American Psychologist* 64, no. 1 (2009), 9–10, https://doi.org/10.1037/a0010932.

27. Antonio M. Taguba, "AR 15-6 Investigation of the 800th Military Police Brigade," 27 May 2004, 16–17, accessed 3 June 2022, https://www.esd.whs.mil/Portals/54/Documents/FOID/Reading%20Room/Detainne_Related/TAGUBA_REPORT_CERTIFICATIONS.pdf.

28. Ibid., 17; Jane Mayer, "A Deadly Interrogation: Can the C.I.A. Legally Kill a Prisoner?," *The New Yorker* (website), 14 November 2005, accessed 22 February 2022, https://www.newyorker.com/magazine/2005/11/14/a-deadly-interrogation.

29. Senate Committee on Armed Services, 110th Cong., *Inquiry into the Treatment of Detainees in U.S. Custody* (Comm. Print 2008), 165, accessed 22 February 2022, https://www.armed-services.senate.gov/imo/media/doc/Detainee-Report-Final_April-22-2009.pdf.

30. Ibid.

31. Philip Gourevitch and Errol Morris, *The Ballad of Abu Ghraib* (New York: Penguin, 2009), 164.

32. Christopher Graveline and Michael Clemens, *The Secrets of Abu Ghraib Revealed: American Soldiers on Trial* (Washington, DC: Potomac Books, 2010), 300.

33. Taguba, "AR 15-6 Investigation," 18.

34. William J. Haynes II, general counsel of the Department of Defense, to Secretary of Defense, memorandum, "Counter-Resistance Techniques," 27 November 2002, accessed 22 February 2022, https://nsarchive2.gwu.edu/NSAEBB/NSAEBB127/02.12.02.pdf; Memorandum for Commander, Joint Task Force 170, "Request for Approval of Counter-Resistance Strategies," 11 October 2002, accessed 22 February 2022, https://www.esd.whs.mil/Portals/54/Documents/FOID/Reading%20Room/Detainne_Related/Request_for_approval_of_counter-resistance_strategies_08F0130_Final.pdf.

35. Gourevitch and Morris, *The Ballad of Abu Ghraib*, 106.

36. Ibid., 81–82; AR 15-6, *Procedures for Administrative Investigations and Boards of Officers*; Anthony R. Jones, *AR 15-6 Investigation of the Abu Ghraib Prison and 205th Military Intelligence Brigade* (Buffalo, NY: William S. Hein, 2005), 3, 26, accessed 22 February 2022, https://www.hsdl.org/?view&did=451656; Taguba, "AR 15-6 Investigation," 26.

37. Gourevitch and Morris, *The Ballad of Abu Ghraib*, 110–11, 200–1.

38. The Associated Press, "Soldier Is Found Guilty in Abu Ghraib Abuse," *New York Times* (website), 17 May 2005, accessed 22 February 2022, https://www.nytimes.com/2005/05/17/us/soldier-is-found-guilty-in-abu-ghraib-abuse.html.

39. Jones, *AR 15-6 Investigation*, 17; Gourevitch and Morris, *The Ballad of Abu Ghraib*, 106; Taguba, "AR 15-6 Investigation," 26.

40. Senate Committee on Armed Services, *Inquiry into the Treatment of Detainees*, xii.

41. Graveline and Clemens, *The Secrets of Abu Ghraib Revealed: American Soldiers on Trial*, 178.

42. George R. Fay, *AR 15-6 Investigation of the Abu Ghraib Prison and 205th Military Intelligence Brigade* (Buffalo, NY: William S. Hein, 2005), 7–8.

43. Vivian Wagner, "Littering and Following the Crowd," *The Atlantic* (website), 1 August 2014, accessed 22 February 2022, https://www.theatlantic.com/health/archive/2014/08/littering-and-following-the-crowd/374913/.

44. Daniel Kahneman, *Thinking, Fast and Slow* (London: Penguin Random House UK, 2012), 402.

45. Karl Marlantes, *What It Is Like to Go to War* (New York: Atlantic Monthly Press, 2011), 26, 30, 77, 139.

46. Ibid., 142.

47. Gavin Mortimer, *The Longest Night: The Bombing of London on May 10, 1941* (New York: Penguin Group, 2005), 206, 229–33, 303–4; Devlin Barrett, "ID Program Limits Volunteers at Disasters," *The Seattle Times* (website), 2 September 2007, accessed 22 February 2022, https://www.seattletimes.com/nation-world/id-program-limits-volunteers-at-disasters/.

48. Jonathan Haidt, *The Righteous Mind: Why Good People are Divided by Politics and Religion* (New York: Pantheon Books, 2012), 158–59.

49. "Peter Kilner," U.S. Military Academy at West Point, accessed 22 February 2022, https://www.westpoint.edu/simon-center-professional-military-ethic/profile/peter_kilner; Pete Kilner, "Is Loyalty Overvalued?," *Army* 67, no. 12 (December 2017), accessed 22 February 2022, https://www.ausa.org/articles/loyalty-overvalued.

50. Charles Duncan, "Honor Has No Merit as One of the Army Values," *Army* 69, no. 2 (February 2019), 13–14.

51. "Summary Lists of the Evolution of the Army Values, 1970-Present (as of: 1 Oct 18)," Center for the Army Profession and Leadership, 1 October 2018, accessed 22 February 2022, https://capl.army.mil/character-development-project/repository/summary-lists-evolution-of-army-values.pdf.

52. Haidt, *The Righteous Mind*, 221.

53. "Army Ethic Development Course," Center for the Army Profession and Leadership, accessed 22 February 2022, https://capl.army.mil/army-ethic-development-course/parts.php.

54. Goodwin, *Team of Rivals*, 560, 669–70.

Mechanics work to fix maintenance issues that are threatening the deployment of U.S. forces to the Pacific theater.

Strategic Sepsis

Maj. Timothy M. Dwyer, U.S. Army

Editor's note: *"Strategic Sepsis" is one of many military fiction stories published by* Military Review *as part of its Future Warfare Writing Program. Imagery includes fake captions to support the storyline. Read more* Military Review *fiction at https://www.armyupress.army.mil/Special-Topics/Future-Warfare-Writing-Program/.*

Four Months until D-Day

It was another boring CUB on the JOC floor. The air conditioner struggled to keep out of the tropical heat, and everything looked damp. The combination of smells from a hundred sweaty people, old food, burnt coffee, and overheated electronics wasn't great either. Through it all, the G-4 mobility warrant diligently went over an infinite number of Excel spreadsheets. Each one detailed troop movements into theater laid out over time. Scintillating. As a battalion commander, I was paying close attention to every colored block.

Actually, no, I wasn't. My battalion's men and women were already on the ground.

Instead, I daydreamed about Kelly and the kids. We were on comms blackout, and I hadn't talked to her in a few weeks. An unsecured cellphone in modern war was as dangerous as lighting a campfire at the Somme.

The Chinese didn't need any help finding us, and we weren't about to give them any. So, no calls home, no Facetime, no v-chat. I remember finding a shoebox with Granddad's old Vietnam War letters to Grandma. I guess my grandkids will get the same opportunity one day. If I'm lucky.

I checked my watch: 0745. That makes it around 5pm at home. Kelly was probably sitting on the couch with the girls, loudly singing Disney songs and giggling. They'd lose track of time and end up eating dinner at 8 o'clock.

I'd kill to be home with them. Actually, we need to kill so I can get back home to them.

At that thought, I looked back up at the screen. The spreadsheet had turned into an alarming mosaic of reds and yellows. The universal sign of a staff officer about to deliver bad news and take their licks. I'd been zoning out for a while; the G-4 actual was up there talking about maintenance. Never a good sign.

"Ma'am, we have been seeing a significant increase in maintenance deadlines across the division. The current levels are beginning to stress our class VII and IX stocks throughout the AOR. I recommend authorizing cannibalization in order to keep forces moving and allow time for stocks to catch up," the G-4 squeezed out.

I was in the cheap seats, and I could still see the sweat on his forehead. It wasn't from the heat.

"Hold off on that for now. What's causing the issues? Are these deadlines from prepositioned stocks?" Maj. Gen. Patters replied. She maintained her casual tone, but we knew it was just a thin veneer painted over mounting frustration. The countdown had started.

"Well, ma'am. I'm not sure ... but … I think …" the G-4 mumbled.

Uh-oh. Blood in the water. I looked over at Lt. Col. Breanna Kass, one of the BSB commanders, and winced, waiting for the hammer to drop. Breanna shook her head back in response, her eyes wide.

"Listen, 4. You're telling me that our entire JRSOI is grinding to a halt because of maintenance issues but you have no clue what the problem is?" the veneer over Maj. Gen. Patters' voice peeled away.

"Well, ma'am …" the G-4 said, shrinking rapidly.

The CW5 maintenance warrant stood up. The G-4's shoulders visibly relaxed. Chief to the rescue once again.

"Ma'am, there is a laundry list of issues deadlining both our rolling stock and rotary-wing assets. None of them are on us. These aren't 'we broke the triple-7 because we towed it wrong' problems. Cracked fuel lines, engine failures, class III oil leaks, you name it. We are working with the TSC on solutions, and we will keep the momentum up the best we can. I will let the staff know when I get an update on the class VII and IX resupply pushes," Chief Lima fired off in her matter-of-fact briefing voice.

Maj. Gen. Patters nodded, "Thanks, Chief. Keep me posted, but no cannibalization this early in the JRSOI."

"Roger, ma'am," the chief and the G-4 replied in unison.

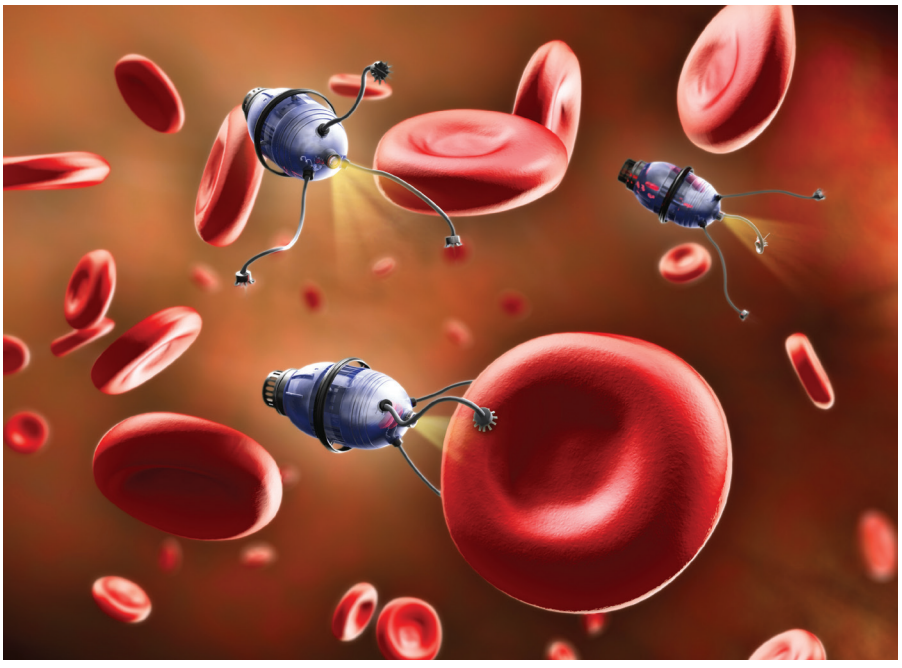
I looked back at Breanna and shrugged. She shrugged back. The problem was obviously wider than what the G-4 briefed. If we were having issues, then it's a safe bet the other divisions were too. I'm sure they'll get it worked out; our G-4 section is a talented group, but it's obviously not a good time to be a maintenance officer. We all saw what a lack of maintenance did to the Russians. That invasion was every shop officer's worst nightmare come true. If we have to start ripping our vehicles apart to fix other vehicles, then we aren't much better. Especially since we haven't even started shooting yet.

Three Months until D-Day

How did we get here? No, not this crappy tent. No, not this specific island. How did we get into war with China? We all figured World War III would be with Russia. Especially after its Ukrainian debacle. So naïve, it was always going to be China if it was anyone at all. World War III, or the modern equivalent of it. It's been a trope for a century. I wish it could've stayed that way.

I remember being told that all soldiers fight for peace, and I couldn't agree more. Peace is what all soldiers want. All the bravado, chest beating, and cadences about fighting to the death are borne out of necessity. What we really want is to grow old

Maj. Tim Dwyer is an explosive ordnance disposal (EOD) officer currently serving as the commander of the U.S. Army EOD Technical Detachment in Indian Head, Maryland. He is a graduate of the School of Advanced Military Studies and his recent assignments include the 20th Chemical, Biological, Radiological, Nuclear, and Explosives Command and the 10th Mountain Division (Light Infantry).



Nanobots travel through the bloodstream and affect blood cells.

watching our grandkids play in the yard. We fight for peace, wishing we didn't have to. If politicians fought half as hard for peace, then we wouldn't be here. Here in this tent, here on this island, here in the Pacific, here in the middle of a war. The war. But here we are. China wanted Taiwan and no one could find a way out without hypersonics, self-cavitating torpedoes, killer drones, and cyber strikes.

Quan Bian, active defense, I don't care what the CCP calls it. Invading Taiwan was a power grab, pure and simple. You can't just invade your neighbors and take their land. That's not how the world works anymore. Now we were on our way to remind the CCP that this is 2035, not 1935. That is, once our forces get into theater. Easy enough for the Navy and Air Force, but it's taking us Army folks a little longer to get into the action.

All those thoughts tore through my mind as I read through the latest SIGACT updates. The Army would get its chance to fight for peace soon enough. For now, it was the Navy, Air Force, Marines, and Space Force doing their share. I never thought I'd wish for another counterinsurgency campaign, but I would definitely take one of those over this. I bet our brothers and sisters in the other services would agree. Large-scale combat operations come with large-scale casualties. Fighting for peace comes with a price.

I shook off that thought. That was enough waxing philosophic. We had a job to do and lamenting the plight of man wasn't going to accomplish it. I pushed back from my plastic field desk and stood up, I had five minutes until the S-2 gave another threat update. Better get moving.

I walked out of the empty tent, past a few other field desks damp with humidity, and into the sticky heat of the day. The sun instantly baked my shoulders and sent fresh rivulets of sweat down my back. Command Sgt. Maj. Hoeger greeted me outside. "All good, sir?" she asked with a salute. "Absolutely, Sergeant Major. How's the last of our JRSOI going?" I shot back, returning the gesture.

"Other than the maintenance, there are no major issues. Our soldiers are hale, healthy, and motivated. The trip was a lot harder on our vehicles than it was on us," she said, falling in next to me as we walked over to the briefing area.

"We aren't the only ones; let's get another update from the maintenance team after the threat brief," I said with a nod, ducking under the flap of camo netting and entering the briefing space.

"Battalion, ATTEN-TION!" snapped CSM Hoeger as she came in behind me.

The assembled group of soldiers jumped to their feet. All our leadership was there. Company commanders, first sergeants, staff officers, and NCOs.

"As you were," I replied, sitting on my camping stool.

There was a chorus of rustling as everyone found their seat.

"Ok 2, we are all busy so let's make it quick. I'm up on the latest SIGACT update; for those of you who haven't read it, make sure you do immediately following this meeting. Take it away," I said, locking eyes with Capt. Blakely.

"Yes, sir. Today I want to concentrate on the potential use of nanoweapons," he said, pointing to the easel.

The easel had "Biological Nanoweapons" written across the top with a series of shapes and words underneath.

No one shed any tears over the death of PowerPoint. Least of all me. Less PowerPoint meant less time wasted matching font sizes and fixing the numbering in the master slides. It also meant fewer computers, less electricity, fewer ethernet cables. All of that meant a nimbler force and a smaller EMR signature. It reminded me of Corporal Upham in the movie *Saving Private Ryan*. No need for a typewriter when a pencil and notepad can do the job. We had half the generators now than when I was a lieutenant. I did miss the omnipresent air conditioning though.

Capt. Blakely pulled out a piece of paper and unfolded it.

He began reading. "For everyone's SA, nanotechnology is the use of microscopic machines that are built to have effects at the molecular or cellular level. Most of us have heard about them used in manufacturing, especially in electronics. Naturally, this has led to the creation of nanoweapons. The same technologies apply, but they have been weaponized to create battlefield effects. This can theoretically include causing physical damage to tissue like bleeding, degeneration, and dissolution. But today we are going to concentrate on a different set of potential effects to the human body." None of this sounded good. I hoped it was mostly hype.

"These human effects can take many forms, but the most likely attack includes infecting the brain and disrupting its function or chemistry. This has been a known area of focus by the Chinese military for over two decades," he said, pointing at the easel. "The goal of these attacks would be to disrupt cognition, slow decision-making, cause depression or apathy, and in general degrade the fighting capability of the infected population. The likely effects could vary widely, though, since the brain is incredibly complicated. These weapons are currently classified as WMDs and CBRN threats. A threat report from the Division G-2 assesses that there is a moderate likelihood of use by the Chinese given the scale of the upcoming conflict. Pending your questions, sir. That concludes my threat update," Capt. Blakely finished, looking over to the staff seated on a bench.

"Just one question, 2," I asked. Blakely's shoulders tensed a little.

"Yes, sir," he replied.

> This has led to the creation of nanoweapons. The same technologies apply, but they have been weaponized to create battlefield effects. This can theoretically include causing physical damage to tissue like bleeding, degeneration, and dissolution.

"Do we have a list of indicators? Any symptoms we could look for?" I said, trying to sound casual to keep the young captain relaxed.

"Yes, sir. There are several potential indicators we are looking for. I will get you an updated PIR list immediately following the brief. As far as symptoms, most of them are pretty common. Headache, runny nose, confusion, blurry vision. We should also keep an eye out for new or increased signs of depression," he said, counting the symptoms off on his fingers.

"Got it, thank you Capt. Blakely," I nodded.

Our CBRN NCO, Sergeant First Class Almeida, stood up. We all instinctively looked over to her.

"Sir, as Capt. Blakely stated, these are CBRN weapons and the same protection functions apply. Before you ask," she said, raising her hand, "we do not have enough information to know if our masks can protect against nanoweapons. The best we can do is monitor our soldiers for the potential symptoms and stay up to date on the current CBRN threat level."

"Thanks, 2. Thanks Sergeant Almeida. Great rundown as always. Let's make sure we sync with the medical folks to determine what the process is if we suspect an attack. Sergeant Major, do you have anything to add?" I asked, looking to CSM Hoeger.

"Yes, sir. Let's make sure we are keeping an eye on our troops. These nanoweapons are a threat but so are artillery, bullets, and air strikes. Keep this in

perspective. Basic troop leading procedures still apply," she said with a nod.

"Thanks, Sergeant Major. 4, grab your maintenance team and come see me immediately following this meeting," I said, looking over to where the S-4 section was seated.

I stood up.

"Clear the way!" the group yelled in unison, jumping to their feet.

"All the way," I replied, returning their salute before ducking under the camo net and out into the sunlight.

Great, brain-rotting nanoweapons. One more risk to mitigate. Back to Corporal Upham again—why use bio-nanoweapons when bombs and bullets could do the trick? I didn't know and I hoped I wouldn't find out. None of that would matter if all our vehicles were broken. Time to get that update from the 4.

Two and One-Half Months until D-Day

I rolled over and tried to put my arm around Kelly. I woke up when it fell off the side of the cot and the metal frame dug into my skin. I pulled my eyelids open and stared out into the pitch blackness, totally confused.

Where the hell am I? It only took me a moment to recover; the smell was enough to remind me I was in an Army tent.

I clicked the light on my watch: 0321. There was a thought scratching at the back of my brain. Something felt off. Not the tent or the darkness. Something else. I rolled onto my back.

Then it struck me. It was the snoring. Not that people were snoring; there wasn't an army tent in the history of human conflict that wasn't filled with snoring in the 80–100 decibel range. The problem was that I could hear it so clearly. Our sole generator was off, and its angelic hum wasn't drowning it all out. Not good. I peeled myself out of the cot, the sweat sticking the T-shirt to my back, and slipped into my running shoes. My knee popped loudly, and my back crinkled like bubble wrap as I stood up and shuffled down the tent and out the flap.

The night was just as dark as the inside of the tent. There were some stars overhead and chem lights tied to random trip hazards but not much else. Sometimes I missed our old FOBs that were lit up like Times Square 24/7. Not anymore, not when you're fighting a peer adversary. Light discipline, EMR limits, nuclear attack drills, casualty numbers in the thousands. Everything old was new again.

I rounded the corner of the tent, careful not to trip over the ropes hammered into the soft ground. There were a few people standing around the generator, hands on their hips. Staff officers aren't the best group to troubleshoot a generator in the middle of the night and it showed. I sidled up next to the black silhouettes to have a look.

"Hey boss, snoring got you too?" Lt. Mani Patel said with a head nod. I didn't realize he was standing next to me until he opened his mouth.

"How could it not? I think the Army keeps the whole CPAP industry in business," I replied.

"That's the truth and a broken generator definitely doesn't help our snorers," Mani said with a laugh.

I pointed at the generator.

"Does it have fuel in it?" I asked, staring blankly at the big metal box on wheels.

"Sure does," someone else replied. I'm not sure who.

"Then I'm out of ideas," I shrugged.

"Yup, that's as far as we got too, sir," Mani shot back with a chuckle. He was obviously a better chemical officer than a generator mechanic.

At that, I walked around the generator to find the fuel cans. Maybe someone put mogas into it?

I kicked the first can I saw, and it felt full. It looked even fuller. The sides of the can were flexed outward at an alarming angle, like a soda can that someone left in the freezer overnight. Maybe it was the heat? Man, we really needed NCO supervision at a time like this.

Bending down, I unscrewed the top of the fuel can and it gave off a loud *psssst* once the top came free. It was like opening a bottle of seltzer. Someone probably filled it with mogas and left it in the sun. Guess it's time to get dressed, shave up, and head to the CP. I didn't need any more sleep anyway.

I turned around and almost bumped into Mani.

"Damn, sir. What's up with that fuel can?" he asked.

"Can fuel cans be broken?" I shrugged.

"That one is, I bet someone put mogas into it," he replied, jerking his thumb at the distended plastic.

"Nothing we can do about it. I'm going to grab some food and head in," I said.

"I'm going to grab a few more winks and I'll see you there, sir," Mani replied, rubbing his left eye with the back of his hand.

The Division's deployment operations are severely hampered by mounting maintenance issues.

I slid past him and headed back to the tent. Someone would fix the generator and it wasn't going to be me. I guess the S-4 would have more maintenance issues to report in a few hours. Regardless, I still had to figure out how to get the rest of the battalion ready for the fight. We all had jobs to do, and it takes everyone from generator mechanics to generals to win a war. I didn't have a hope of being either one, and I was no help kicking fuel cans in the middle of the night.

A slight headache was chewing away behind my eyes as I shuffled my way through the tent, careful to avoid catching my foot on the leg of a cot. It was probably nothing. We were at war, after all, a headache was the least of my problems. A headache could be caused by about a hundred different things and I'm pretty sure too little sleep and too much coffee was at the top of the list. They were doing the nano blood test at the aid station, though. I'd have to head over there when I got a chance. If I got a chance, there was already too much to do in a day. I quickly changed out of my PTs and into my uniform, grabbing my razor and shoving it into my pocket before heading back out into the night.

Time to get back to work. As they say, sleep is for the weak.

Two Months until D-Day

"You feeling all right, Sergeant Major?" I asked. "Absolutely, sir. Never better," CSM Hoeger replied, wiping her upper lip with her sleeve.

She looked like a zombie. Her skin was gray, eyes were sunken in, and drops of sweat beaded in her eyebrows.

The battalion TOC was filled to the brim. Shift change had just ended, and the night shift hadn't cleared out yet. The sticky heat was pressing in more than usual. The smell wasn't great either. War is hell, I guess.

"You sure? I can take the BUB and fill you in later," I said, lowering my voice. I didn't want the soldiers to overhear. Appearance is everything and the CSM wouldn't want anyone to think she was soft. Everyone was talking in the cramped tent, though. I doubt anyone could hear our sidebar.

"Roger, sir. I feel fine but I'll head down to the aid station and check on the troops. We can cross load later," she said with a nod.

"Sounds like a good idea. Maybe ask one of the medics to stick you while you're there? Looks like you could use some fluids," I replied, leaning in to whisper.

"Nah, I'm fine, sir. I'll be back in a bit; we still have a few soldiers laid up down there with illnesses and NBIs," CSM stated with a wave of her hand.

I nodded and she stood up. I swore she wobbled a bit when she hit her feet before righting herself and walking down the alley between the field desks and out the tent flap. I hope the medics give her something.

"… 63 this is … 6 … io check, over," came the call over the TOC speaker.

"Last calling station, you came in broken and unreadable," came another voice.

"… *scratch* … eck, over," the first voice repeated.

"Last calling station, you came in broken and unreadable," the second voice replied.

I couldn't take it anymore. Between the sweating tent, a cacophony of separate conversations, and the broken radio transmissions I was ready to tear my hair out.

"Attention in the TOC!" I yelled.

"Attention in the TOC!" replied the thirty-something people in the tent.

"Night shift, get out of here. Get some chow and get to sleep. Battle captain, make sure the comms are up and our overlays are updated in accordance with the BUB. I'm going to the brigade main to take the BUB in person," I said, delivering a knife-hand to the different parties in turn.

A chorus of "Roger, sir!" was issued in reply.

The night shift started to funnel out, pausing while I grabbed my helmet and walked my way down the aisle. I pulled open the flap and was out into the morning.

It was warm, but the day's heat hadn't settled in this early. I could feel the vibration of activity as the battalion and our sister formations conducted their own changeovers and prepared for another day of preparing. I walked away from our TOC and over to our motor pool. A few dozen vehicles were lined up in neat rows. My truck was first, and I walked over to the driver's door, sand and rocks crunching beneath my feet. The door stood open, and Sgt. Borman was in the driver's seat trying to turn the engine over.

"Good morning, Sgt. Borman," I said cordially. By the look on his face, I could tell his morning was anything but.

"Mornin', sir," he said, giving the engine another go. I could hear the starter motor whining but not much else.

"Having issues? We just ran this thing last night," I said, putting out my elbow to lean on the rear door.

"It won't start, sir. Ran fine yesterday, topped it off last night. No issues at all. Today it won't start." He replied in staccato. He tried the engine again. No luck.

"Grab the motor sergeant, and get it looked at. I'll grab a different ride up to brigade," I said, giving him a slap on the shoulder.

"No, sir! I'll grab another vehicle and get you up there," he said, trying to jump out of the truck.

"And if you did, this truck would still be broken and there wouldn't be anyone to make sure it gets fixed. I can make my own way; you get this running again. We are going to need it," I said with a nod, turning to walk away.

"Roger, sir," Sgt. Borman said, defeated. He gave the engine another try. It still didn't turn over.

I walked to the end of the motor pool and to the main strip through the camp. The BSB was directly across from us, and Lt. Col. Kass was pulling out in her own vehicle.

Her truck jerked to a stop, her door popped open, and she stuck out her helmeted head.

"Need a ride?" she asked

"Absolutely, you driving?" I replied.

"You walking?" she said, disappearing back inside the vehicle and slamming the door.

I opened the TC door and climbed in, closing it behind me, pulling on my seatbelt, and strapping on my helmet. Safety first.

"I know our job is to drive you guys around and deliver your stuff, but this is getting a bit ridiculous," Breanna said with a smile.

"Yeah, yeah, yeah. Sgt. Borman couldn't get my truck started and I was sick of taking the BUBs over the radio. Figured I'd head up to the main," I said, crossing my arms.

Breanna pulled out onto the main strip and up the slight rise toward the brigade. It was only a mile or so but always felt like a 5K in this heat.

"Damn, broke down again? I swear, I could never understand how a vehicle with fifteen hundred miles on it, that gets worked on every single day, could still break down. One day the Army will learn that if you spend more money on the front end then you save more money on the back end," she said, shaking her head.

Breanna hit the turn signal to turn into the brigade motor pool and waited for a line of soldiers to march past the entrance.

"Speaking of breakdowns, how are you doing? Where is Sgt. Popper?" I asked as the line of troops finally passed and we made the turn.

"About the same as everyone. Fighting through the maintenance issues. Popper was throwing up this morning, so I sent him to the aid station. Said he was feeling dizzy. Must've gotten a stomach bug or something," Breanna said matter-of-factly.

"Sounds like my sergeant major. She won't admit it, but she looked like hell this morning. The heat, the travel, the food, the water. Takes some getting used to, I guess," I replied. "You know it's bad if Hoeger is sick; she is tough as nails," Breanna said, sitting up to see over the nose of the truck.

"You're not wrong. Did Popper get a nanoweapon test?" I asked.

"No clue, I figured the aid station would sort that out. I can't imagine how the Chinese could've infected us here though. I bet they made the tests, maybe it was through those," she said.

"Good point," I replied. The vehicle came to a stop, and I opened the door to hop out and ground guide Breanna into the motor pool. Safety always.

I started walking, listening to the truck idle forward behind me, and returning confused salutes from soldiers wondering why a battalion commander was ground guiding another battalion commander. CSM Hoeger would blow her lid if she saw me right now.

We got the truck parked and Breanna hopped out. We both swapped our helmets for our PCs. "You know what the good news is?" Breanna asked as we walked through the c-wire and into the brigade checkpoint.

"No clue," I said.

"Always the optimist. The good news is that if we are having this much trouble, just imagine what maintenance and healthcare are like in the PLA," she chuckled, pushing through the tent flap.

"You're right, can't be much better," I replied. If our all-volunteer professional force is struggling. I'm sure the "volunteer" PLA is too.

One Month until D-Day

I ripped open my MRE and dumped it onto the dirty green plastic of the folding table, sliding onto a stool as it all tumbled out. A random assortment of oversweetened, oversalted food greeted me, and I ripped open the package on top. Salted almonds with artificial smoke flavor added. Just like Mom used to make. I stuffed them in my mouth and moved onto the next thing in the pile. Peaches in syrup. Down they went in a gulp. I learned long ago never to complain about MREs. The only thing worse than an MRE was no MRE. After spending two days in the mountains of Yemen without a Class I resupply I swore I'd never complain about them again. That still holds true but that doesn't mean they taste good. Best to get it over with quickly.

The next package was chicken in pesto sauce. Not my first choice for breakfast but not my last choice either. I skipped the spoon and poured it into my mouth from the package. Mani sat down next to me.

"First, we have to take cold showers, and now we don't get any hot chow. The loggies need to get their act together," Mani said. His hair was still wet. A little too long too.

I rubbed my own head and felt hair between my fingers. We all needed a cut.

"Oh come on, Mani. It's not all bad," I said between bites.

Breanna sat down across from us and plopped her MRE on the table. She nodded. We nodded back.

"I mean, come on. What the hell is the deal? Lt. Col. Kass, do the women's showers have hot water?" he asked.

"You're assuming I shower," she said with a straight face.

Mani turned red, "Well, um … ma'am," he stuttered.

She laughed, "I'm kidding. Gods, do you really think that little of me? No, we don't have hot water either and it doesn't look like we will anytime soon. I bet if I took my uniform off it would crawl away."

"War is hell, huh? At least we still have showers and chow. Besides, who wants a hot shower when it's 90 degrees out anyway?" I said with a shrug.

"Your glass is always half full, isn't it sir?" Mani chuckled, tearing open his brown plastic MRE bag.

"Yeah right, his glass is empty. He just doesn't let you hear him complaining about it," Breanna said to Mani, picking through her pile of brown plastic packages.

She looked at me, "How is your headache today?" she asked.

"Bad, but it's been worse," I said with a wave of my hand. That was a lie; it felt like my brain was trying to claw its way out of my skull.

Contaminated fuel destroyed engines throughout the theater and ground U.S. operations to a halt. Trucks, tanks, ships, aircraft, and generators were all rendered inoperable.

"Seriously though, Breanna. What's the issue with the showers and chow?" I continued, changing the subject with a mouth full of pesto sauce.

"The same as everything else. Our maintenance issues are off the charts; it seems like everything that can break is breaking," she said, crinkling her nose at her pile of MRE packages.

"I've heard that every morning at the CUB, what's the problem though? Are we really that bad at maintenance stateside? Did we just ship a bunch of broken equipment?" I put my food down for this one; these maintenance issues had been throwing off the whole division timeline for weeks. Even the corps was backed up.

"Honestly? I have no idea. I know for a fact that all this stuff wasn't broken when we loaded it on the trains and it didn't all get broken in transit. I've heard that there is some issue with our Class 3, but that is way outside my lane," she shrugged, finally selecting the vanilla pound cake, and ripping open the package. She flicked off the silica stay-dry pack and took a bite.

"What's the issue? Are we running out before the war even starts?" I asked.

Mani put his hand to his mouth to finish chewing. "I actually heard something about that. Apparently, a lot of our maintenance people and fuelers have been sick," he said before taking another bite.

"And …?" Breanna and I both asked, then shot each other a look.

Mani put his hand over his mouth again. I started drumming my fingers on the table.

"Well, you know how spun up everyone is about a biological nanoweapon attack?" he asked.

"How could we forget? I've probably had more nanoweapon tests in the last two weeks than Covid tests in two years," Breanna replied.

Mani looked over to her.

"Yes, ma'am. Well, there was tons of intel about a potential attack so us chem folks have been dissecting every event in the theater to figure out if there was a biological nanoweapon involved. I heard through the grapevine that some lab over there has been looking at fuelers and mechanics. They don't know why yet but it sounded like they were worried about it. Sounds like those groups have been taking the brunt of the illnesses," he shrugged before taking another bite.

"Sick mechanics would explain a lot of our maintenance hold ups. But why would those groups be sicker than the rest of us?" I said, looking at Mani and Breanna in turn.

"Well, bad fuel could …" Breanna began before being cut off.

A sergeant ran into the chow area. I didn't recognize him, but he started talking frantically to some NCOs a few tables over. They all threw down their food and jumped up. Then the six of them took off on a run.

Interesting.

I nodded at Breanna and Mani. "That can't be good," I said, standing up.

My head swam as I got to my feet and my skull almost split open. I winced, screwing my eyes closed and pushing the pain down before taking a step.

Breanna gave me a look. I shook my head.

"Definitely not good …" Breanna replied, following me.

Mani stood up silently, chewing with his hand over his mouth again. I didn't wait for him to finish and instead started walking after the group of NCOs. Officers never run unless they're in PT or combat. I didn't count this as either one, so I kept it to a walk.

A fast walk.

I left the overhang of the mess tent, the sun instantly warming up my shoulders and the top of my hat and made a left onto the main strip through base. Soldiers, sailors, airmen, guardians, and marines seemed to be streaming from every nook and cranny onto the main road. All were headed in the same direction. Definitely not a good sign.

A low rumble rose over the crowd, like thunder in the distance. I could see black smoke start to billow up from somewhere over the trees.

I picked up the pace, gravel crunching under my boots as Breanna and Mani fell in on my left and right.

It didn't take long to figure out where everyone was going. I turned a corner and could see some kind of superstructure standing out over the trees. It looked like the top of a ship. All gray metal and antennas rising into the air. As big as a building. Smoke was billowing from somewhere behind it. There was a sizeable crowd gathered, several hundred people all talking over each other filled up the space between me and whatever was up on the beach.

"That's a ship," Mani said vacantly.

"Good thing you're here, we never would've figured that out," Breanna said, wiping sweat off her upper lip with her sleeve.

"No, like a real ship. That's a surface combatant," Mani said, eyes wide.

I couldn't blame him. There was a ship on the beach. Not a boat. But a ship. A big one. The kind that is supposed to be sinking Chinese destroyers and shooting down missiles somewhere out in the ocean.

I spotted a Navy master chief walking against the grain toward me through the crowd. I cut him off.

"Excuse me master chief, what's going on?" I asked quickly. He was definitely in a hurry, and I wasn't about to hold up a master chief for too long.

"That's the USS *Thad Cochran*; it was dead in the water and was getting towed back when both tugs lost propulsion. The whole lot drifted onto the beach," he said in a gruff voice. Sweat was pouring down his face.

"How'd that happen?" I asked, gawking at the superstructure above the trees.

"I'm not a mechanic and you're not either, sir," he said with a nod, moving past me.

"This is bad," Breanna said.

Xenobots are living nanomachines.

"Good thing you're here, ma'am. We …" Mani started but Breanna's look stopped him in his tracks.

"Ok, let's get it together," I said to our small group.

"We're no good here, let's stop rubber necking and get back to work," I nodded, turning away from the crowd.

"You're right, I'm headed to the Brigade TOC; they should have an update," Breanna confirmed, quickly walking back up the road.

I fell in behind her, trying to keep up. My battalion CP was in the same direction. Our whole division took up that area of the island.

We were salmon swimming upstream against the crowd of people pushing toward the beach. I guess it wasn't just the Army that was having maintenance issues. Maybe their mechanics were sick too? I had no clue, but a beached destroyer could not be a good sign.

There Won't Be a D-Day

Well, that was gross. Not the puking. That's no big deal. Easy in easy out. Puking never really bothered me. But, puking into the blue water inside a port-a-john? Gross. I wiped my mouth with some toilet paper and

threw it into the blue water with the rest of my last MRE. Best not to think about it too much.

The port-a-john door slammed behind me as I walked back into the sunlight, sweat pouring from my face. I felt terrible and probably looked worse. It didn't matter. Today was the day that we lost the war. Our division, that is. I don't know about the rest of the coalition and that's the problem. We lost power about twenty-four hours ago, and our comms and networks went down shortly after that. We've been isolated from the rest of the world ever since. I walked over to a pile of tough boxes and took a seat. That was easily the worst CUB I've ever been through. The news was still weighing on my mind. It felt like I was just thrown down a flight of stairs. Twice.

I pulled out my notepad. Maybe writing to Kelly would help me unpack this.

I've been trying to write this letter for the last twenty-four hours. I just couldn't figure out how to start it.

I put my pen to the page, the sweat from my hand dampening the paper.

Dear Kelly, we lost the war to China and the world will never be the same.

I stared at the words for a second before ripping off the page and shoving it in my pocket with the other crumpled up letters. No point in self-loathing. We were still breathing, and I wasn't going to give up yet and neither was the rest of the coalition. Refusing to give up and believing we could win were two separate things, though.

I sat there, staring at my lap. A large bead of sweat dripped off my nose and splashed off the front of my pants. A pair of boots planted themselves in front of me and I lifted my eyes up to see Breanna standing there.

"Gods, are you crying?" she asked incredulously, hands crossed over her chest.

"Seriously?" I asked, trying my best to crack a grin.

"Yeah, seriously. You look terrible. Your eyes are totally bloodshot," Breanna shot back.

"Nah, just got done with a Class 1 download and not from the right end, either," I said. I smiled for real this time.

Breanna's nose wrinkled and she took a step back.

"Nasty. Seems like half the brigade is sick. You heading to the aid station? Or are you going to try and infect the rest of us?" she asked. "I'd bet it's more than half. Nah, I'm fine. Just a bad MRE or something," I said with a wave of my hand.

"You sure? What did your nanotest say?" Breanna said, raising her eyebrows underneath the brim of her hat.

"Don't know, I haven't gotten one yet," I said, standing up.

I didn't want to get one.

Breanna took another step back.

"Are you kidding me? How could you not get tested?" she asked. She unfolded her arms and planted her hands on her hips, feet apart.

"I've been busy, and I doubt they can test me without any power anyway," I said with a shrug.

"You should get one anyway; let's head over there. It's on the way back to our battalions," she said, waving at me to follow her as she walked away.

"Does it matter? You heard the update," I said, falling in next to her. She took an additional step to her right, putting more distance between us. I didn't blame her. I probably didn't smell great.

"Of course I heard it, but what else can we do? I'm not going to sit here waiting for a missile to blow my ass off this island. Are you?" she argued.

"No. But what can we do? How did no one figure out what was happening earlier than at the end?" I asked.

"Well, we knew all along that the CCP was planning on using biological nanoweapons," Breanna shrugged.

"Yeah, but we thought they'd be using them on us. I'd never even heard of oil eating bacteria let alone nanobots that could eat fuel," I said.

Mani was walking up the road from our battalion area. He saluted, we saluted back.

"Morning, sir. Ma'am," he said, dropping his salute.

"What now?" I asked. I had no patience left. Or energy to pretend that I did.

"Xenobots, sir," he said.

"What are you talking about?" I replied, more harshly than I wanted.

Mani pressed on, "You said nanobots. They're actually called xenobots, sir. Living nanobots named off a proof-of-concept experiment done years ago."

Breanna and I stopped walking. She turned toward Mani.

"Ok, I'll bite. We got the update Mani. What are we actually dealing with?" she asked.

"Yes, ma'am. Apparently the Chinese bioengineered xenobots based off several strains of marine bacteria that can feed on hydrocarbons. These xenobots literally eat fuel. Mogas, diesel, JP8, oil, you name it. They eat the complex hydrocarbons and release

methane," Mani said. His eyes were going wide, his face was animated, and he was excitedly talking with his hands.

"So, what does that do to our class 3b supplies?" Breanna asked.

"Oh, ma'am. It destroys them. Our fuel gets turned into a soup of living and dead xenobots. The buildup of methane gas pressure destroys fuel lines, ruptures tanks, and destroys engines. Not to mention the methane is flammable, or explosive in the right circumstances," Mani replied. He was speaking more quickly with every word.

My head was still swimming from everything that had happened this morning. I was thinking with a brain made of cotton balls.

"Ok, fuel poison. Got it. But how did they get enough of this stuff into every fuel tank, every ship, every aircraft, every everything in the entire theater to shut it all down? They would have needed to walk around with millions of gallons of this stuff putting it into everything to have an effect like that. I didn't see any Chinese spies putting 'xenobots' into our generators," I said, trying to wrap my head around it.

"That's just it, sir. They didn't need to. All they had to do was get a few xenobots into a few key fuel stockpiles and bam. The xenobots start eating fuel and reproducing. Then those new xenobots eat more fuel and reproduce more. Every time fuel is downloaded from a storage tank to a pipeline to a tanker or a 978 to a gas tank then the xenobots go with it. They only needed to infect the system once and then the rest of the system infects itself," Mani said.

Breanna took off her cover and wiped the sweat off her forehead with her sleeve. She put the cover back on.

"Like a bacterial infection," Breanna said.

"Exactly, ma'am. Like sepsis. Once it's in your blood, your blood spreads it to everywhere else in your body," he replied.

"Ok, got it. It's bad. So, how do we fix it?" I asked.

"You don't," Breanna said.

"What do you mean?" I shot back.

"If what Mani just said is right. That means that by the time we hit total system failure, which was probably yesterday, then the majority of our fuel systems are infected. All the maintenance issues, all the engine failures, all the blown timelines. That was the nanoweapon attack all along. We've had months of these problems. I can't think of a way to fix an engine whose entire fuel system is contaminated short of replacing the whole thing," she replied.

> "Apparently the Chinese bioengineered xenobots based off several strains of marine bacteria that can feed on hydrocarbons. These xenobots literally eat fuel."

"Ok, so we start replacing fuel tanks," I said. That wouldn't be easy, but it's not impossible.

"No, sir. We can't," Mani said, shaking his head.

"Why?" I snapped. My head was pounding.

"Because it isn't just some fuel tanks. It's entire engines. Fuel pipelines. Seagoing tankers, fuel depots in the states, aircraft. Gas cans. Anything that touched infected fuel is likely infected and we don't have a way to get the xenobots out. They eat fuel, you can't exactly poison them without also ruining whatever they're in. We can't fix it. Or at least not before China finishes their seizure of Taiwan. Everything but our subs and carriers run on petroleum. They can't fight by themselves. Especially not when all our aircraft are grounded," Mani replied, wringing his hands.

"Won't this ruin the Chinese fuel supply too?" I asked.

"No, we don't share our fuel supplies. The USINDOPACOM fuel supply was self-contained and theater specific. We were the only ones using it. Well, us and our allies. They need to quarantine all our equipment ASAP so the rest of our forces don't get infected too. The rest of the country or the world for that matter. The U.S. economy is going to take a major hit on this," she replied, looking at the ground. The gravity of her voice was clear.

"Not just the economy, what if this gets out to the rest of the world? This could bring down whole

countries," I said. I took off my hat and could feel the sweat trickle down my face. I pinched the bridge of my nose trying to relieve some of the pressure in my head.

"Not if they get their hydrocarbons from Russia, Iran, Venezuela, or China," Ravi replied with a shrug.

That thought hung in the air like a weighted blanket.

"But what about all the other illnesses? Are we under multiple different nanoweapon attacks?" I asked, grasping for further implications.

"No, sir. You just have a stomach bug," Mani replied. ■

Glossary

AOR—area of responsibility
BSB—brigade support battalion
BUB—battle update brief
CBRN—chemical, biological, radiological, and nuclear
CCP—Chinese Communist Party
Class 3b—bulk fuel
Class VII—major end items (e.g., tanks, radios)
Class I—rations
Class IX—repair parts
CP—command post
CPAP—continuous positive airway pressure
CUB—command update brief
EMR—electromagnetic radiation
FOB—forward operating base
G-2—assistant chief of staff, intelligence
G-4—assistant chief of staff, logistics
JOC—joint operations center
JRSOI—joint reception, staging, onward movement, and integration
MOGAS—motor gasoline
MRE—meal, ready to eat
NBI—nonbattle injury
PC—patrol cap
PLA—People's Liberation Army
SA—situational awareness
S-2—battalion or brigade intelligence staff officer
SIGACT—significant activity
TOC—tactical operations center
TSC—theater sustainment command
USINDOPACOM—U.S. Indo-Pacific Command
WMD—weapons of mass destruction

Photo Attributions

The photos featured in this FWWP article contain fictional cutlines. The original cutlines can be found below in order of appearance.

Page 120: Photo by Spc. Khalil Jenkins, U.S. Army, https://www.dvidshub.net/image/6299458/82nd-airborne-division-conducts-vehicle-pmcs-class

Page 122: Nanobots going through the bloodstream and repairing some blood cells. (Digital illustration by Andrea Danti)

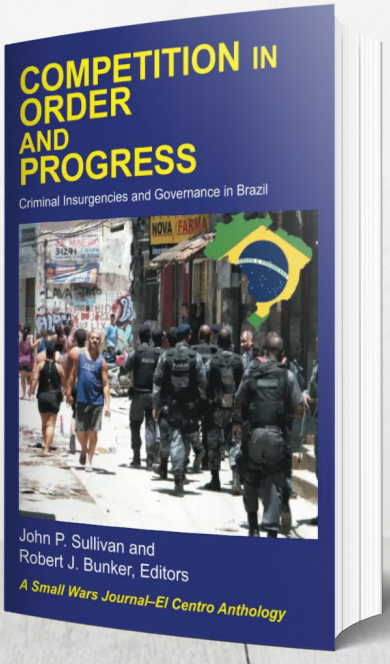
Page 125: Photo by Spc. Jarod Dye, 121st Public Affairs Detachment, https://www.dvidshub.net/image/3485718/488th-military-police-company-takes-training-seriously

Page 128: Naval crews work to free the USS *Monssen* after it washed ashore in Holgate during the March Storm of 1962. The boat finally was freed six weeks after the storm. (Photo courtesy of the U.S. Navy)

Page 129: Xenobot (Photo courtesy of Wikimedia Commons)

Competition in Order and Progress

Criminal Insurgencies and Governance in Brazil



Edited by John Sullivan and Robert Bunker, Xlibris, self-pub., 2022, 606 pages

Lt. Col. James J. Torrence, U.S. Army

Competition in Order and Progress: Criminal Insurgencies and Governance in Brazil is a Small Wars Journal–El Centro Anthology edited by John Sullivan and Robert Bunker. Bunker and Sullivan have studied and published papers and anthologies on Latin American conflict with a focus on national and transnational criminal organizations for more than three decades. This is an absolute must-read for scholars and practitioners focused on criminal insurgencies, counterinsurgency, and urban warfare. Though the book focuses on Brazil, the complex relationships between the population, local militias, gangs, and the government make this research relevant for any complex urban environment where government services cannot reach the entire population. Before reading this anthology, the reader would benefit from studying Sullivan's work on third generation gangs, David Kilcullen's theory of competitive control, and the strategic notes and articles published in the *El Centro Journal*.[1]

With twenty authors and over five hundred pages of content, *Competition in Order and Progress* covers a range of topics spanning the specific criminal organizations in Brazil (i.e., Primeiro Comando da Capital [PCC] and Comando Vermelho [CV]) to the challenges of corruption within the Brazilian government. The book is a mix of tactical research notes of individual events in Brazil (everything from bank robberies and complex assaults from criminal organizations to attempts at urban policing from the state) and long-form essays. There are two key themes that stand out from this anthology: the origin and transnational spread of criminal organizations created from a vacuum of state power and the challenge of mounting an effective counterinsurgency with a corrupt government.

Christian Vianna de Azevedo identifies the major challenge in Brazil, which is that "the state is almost completely absent" in the favelas which results in "drug gangs impos[ing] their own systems of justice, law

and order, and taxation enforced through the force of arms."[2] Azevedo further identifies that the vacuum of power created by a failure of government results in drug cartels that "become criminal insurgents" that "take over geographical areas in which the state has no functional authority."[3] COVID-19 conditions were an example in which "gang leaders acted in the absence of formal governance—they implemented lockdowns, curfews, and created an ad hoc public health system, although not nicely."[4] The rapid urbanization of Brazil coupled with the inability of the government to provide services resulted in the rise of criminal organizations. Even the attempt at religion to "purge gangs and drugs from their community" backfired as evangelical groups (also known as evangelical gangsters) resorted to the same tactics as gangs to consolidate power in support of their mission.[5] The gangs such as PCC and CV that rose in the absence of governance are not just confined to Brazil, which makes them an international problem.

Bunker, Sullivan, and José de Arimatéia da Cruz identify that "the migration and subsequent formation of new gangs or criminal nodes (intentional or unintentional) within émigré or diaspora communities can result in an intentional or unintentional criminal diaspora."[6] Brazil's gangs have "criminal networks not only in Brazil, especially in States of São Paulo and Rio de Janeiro, but they are also active in the Tri-Border region and several other countries in South America."[7] Brazil's criminal organizations are not just confined to South America. In one of the more fascinating examples of the spread of criminal gangs, Bunker and Sullivan identified an offshoot of Primeiro Comando da Capital identified in the Northeast United States in 2018.[8] Gangs in Brazil are "transitioning from solely a law enforcement issue to a full-blown national security concern as they directly challenge sovereign prerogative and authority."[9] The government continues to make attempts to pacify criminal organizations within Brazil and to restore order to the favelas, but it has its own challenges with corruption it must first overcome.

Stephen M. Noguera argues that "Brazil has been transformed from an up-and-coming major actor in the international community in the mid-20th century to a hotbed of underworld activities that are increasingly become an integral part of the country's governing apparatus at present."[10] In a clear sign of an ineffective government, each "of the last six governors of Rio de Janeiro have gone to jail" with the latest impeached on corruption charges.[11] In August 2021, the ex-secretary of prisons "was arrested for corruption" after meeting with CV leadership with an agreement to "transfer gang members to less restrictive state prisons in Rio de Janeiro and overlook the gang's activities and prison expansion in exchange for reducing violence in Rio."[12] The penetration of the Brazilian government from criminal factions undermines the confidence in the government from the populace and increases the reliance on the existing criminal organizations. Noguera argues that "when criminal organizations and illegal acts become fully institutionalized and entrench in a society's consciousness and status quo, making substantive progress is not only challenging, but essentially impossible."[13] There is a consensus from authors in the anthology that Brazil is not a failed state, but that there are territories within Brazil that "are like 'failed states' within a functional country."[14]

There are no easy solutions to the problems identified in this volume. Government corruption combined with criminal factions that have both money and political sway make Brazil a functioning state that has pockets of territory and population that are beyond government control. When the government cannot exhibit influence in criminal-controlled territories, the people who live in those territories will depend on criminals for basic services and will lose trust in the government. The challenges posed in this book are the challenges with which scholars and military leaders must grapple. The United States wants to pivot from counterinsurgency operations to large-scale combat operations. The next conflict(s) will inevitably involve urban warfare in which there are local and transnational criminal factions vying for power

Lt. Col. James J. Torrence is an active-duty U.S. Army signal corps officer. He is a graduate of the United States Military Academy. He has a doctorate in strategic security and multiple graduate degrees including an MS in strategic design and management, an MS in cybersecurity, and a Master of Military Art and Science. He has deployed twice to Afghanistan as a battalion communications officer and has served in various military leadership positions in the United States, Germany, Belgium, Korea, and Israel. He is the author of *Strongpoint Cyber Deterrence*.

and influence. We cannot abandon our understanding of contemporary insurgencies and transnational organizations because large-scale-combat operations will involve urban conflict, likely in a megacity, in which our forces must prepare for operating in an environment that has existing and newly formed national and transnational criminal organizations.

Sullivan and Bunker's anthology is an incredible amount of information both on the current challenges of criminal insurgencies and government corruption in Brazil and information on the origin and spread of criminal organizations in the absence of state power. This anthology adds to the literature on Latin American criminal organizations and should serve as a thought primer for leaders thinking about operating in countries with criminal organizations that exert influence on the people and the government. *Competition in Order and Progress* further solidifies El Centro as the most relevant and current hub for scholarship on Latin American guerilla wars and criminal insurgencies. For military professionals looking to learn more about national and transnational criminal organizations, this is an outstanding introduction to a topic that will be part of the next major conflict. ■

Notes

1. John P. Sullivan, "Third Generation Street Gangs: Turf, Cartels, and NetWarriors," *Transnational Organized Crime* 3, no. 2 (Autumn 1997): 96; David Kilcullen, *Out of the Mountains: The Coming Age of the Urban Guerilla* (New York: Oxford University Press, 2013), 125–27; *El Centro* (website), accessed 8 July 2022, https://smallwarsjournal.com/elcentro.

2. Christian Vianna de Azevedo, "Criminal Insurgency in Brazil: The Case of Rio de Janeiro: Context, Confrontation Issues and Implications for Brazilian Public Security," in *Competition in Order and Progress: Criminal Insurgencies and Governance in Brazil*, ed. John Sullivan and Robert Bunker (self-pub., Xlibris, 2022), 320.

3. Ibid.

4. Natalie D. Baker and Gabriel Leão, "Parties of Crime? Brazil's Facções Criminosas–Good Governance and Bad Government," in Sullivan and Bunker, *Competition in Order and Progress*, 382.

5. Robert J. Bunker, John P. Sullivan, and José de Arimatéia da Cruz "Third Generation Gangs Strategic Note No. 6: Holy War in Rio's Favelas: Bandidos Evangélicos (Evangelical Bandits)," in Sullivan and Bunker, *Competition in Order and Progress*, 45.

6. John P. Sullivan, José de Arimatéia da Cruz, and Robert J. Bunker, "Third Generation Gangs Strategic Note No. 15: Primeiro Comando da Massachusetts (PCM) Emerges in Massachusetts," in Sullivan and Bunker, *Competition in Order and Progress*, 99.

7. Becky Kohler da Cruz and José de Arimatéia da Cruz, "Brazil's Transnational Organized Crime (TOC) and Its National Security Implications," in Sullivan and Bunker, *Competition in Order and Progress*, 303.

8. Sullivan, Cruz, and Bunker, "Third Generation Gangs Strategic Note No. 15," 97.

9. John P. Sullivan, José de Arimatéia da Cruz, and Robert J. Bunker, "Third Generation Gangs Strategic Note No. 9: Concerns About Potential Gang (PCC-Primeiro Comando da Capital & CV-Comando Vermelho) Influence on Upcoming Brazilian Elections," in Sullivan and Bunker, *Competition in Order and Progress*, 59.

10. Stephen M. Noguera, "The Evolution of Brazilian Militias," in Sullivan and Bunker, *Competition in Order and Progress*, 432.

11. Robert Muggah, "Rio's Bloody Police Campaign," in Sullivan and Bunker, *Competition in Order and Progress*, 394.

12. John P. Sullivan, José de Arimatéia da Cruz, and Robert J. Bunker, "Third Generation Gangs Strategic Note No. 43: Former Rio de Janeiro Prison Secretary Arrested for Collusion with the Comando Vermelho," in Sullivan and Bunker, *Competition in Order and Progress*, 253.

13. Stephen M. Noguera, "The Evolution of Brazilian Militias," in Sullivan and Bunker, *Competition in Order and Progress*, 433.

14. Christian Vianna de Azevedo, "Criminal Insurgency in Brazil: The Case of Rio de Janeiro: Context, Confrontation Issues and Implications for Brazilian Public Security," in Sullivan and Bunker, *Competition in Order and Progress*, 320.

U.S. Marine Corps body bearers from Marine Barracks Washington, D.C., carry the casket of Chief Warrant Officer 4 Hershel "Woody" Williams at the West Virginia State Capitol rotunda during memorial services 3 July 2022 in Charleston, West Virginia. (Photo by 1st. Lt. Mallory S. VanderSchans, U.S. Marine Corps)

Hershel Woodrow "Woody" Williams

2 October 1923–29 June 2022

The Medal of Honor, the Nation's highest military decoration, is awarded to "members of the United States Armed Forces who distinguish themselves through conspicuous gallantry and intrepidity at the risk of life above and beyond the call of duty."[1] The award is so prestigious that of the sixteen million Americans who served during World War II, only 473 service members were awarded the Medal of Honor.[2] The last remaining member of this elite group, Marine Corps veteran Hershel "Woody" Williams, passed away 29 June 2022 at the age of ninety-eight. Williams first saw combat on the island of Guam, but he received the Medal of Honor for his actions on Iwo Jima while serving as a flamethrower operator in a demolition detachment with 1st Battalion, 21st Marine Regiment, 3rd Marine Division, on 21 February 1945.

According to Williams's award citation, when U.S. tanks were attempting "to open a lane for the infantry through the network of reinforced concrete pillboxes, buried mines, and black volcanic sands, Cpl. Williams daringly went forward alone to attempt the reduction of devastating machine gun fire from the unyielding positions. Covered only by riflemen, he fought desperately for four hours under terrific enemy small-arms fire and repeatedly returned to his own lines to prepare demolition charges and obtain serviced flamethrowers, struggling back, frequently to the rear of hostile emplacements, to wipe out one

position after another. On one occasion, he daringly mounted a pillbox to insert the nozzle of his flamethrower through the air vent, killing the occupants and silencing the gun; on another he grimly charged enemy riflemen who attempted to stop him with bayonets and destroyed them with a burst of flame from his weapon. His unyielding determination and extraordinary heroism in the face of ruthless enemy resistance were directly instrumental in neutralizing one of the most fanatically defended Japanese strong points encountered by his regiment and aided vitally in enabling his company to reach its objective."[3]

Williams was awarded the Medal of Honor by President Harry S. Truman on 5 October 1945 along with ten other marines and two sailors. He served in the Marine Corps for seventeen years before retiring as a chief warrant officer 4. He subsequently worked in the Department of Veterans Affairs and devoted his life to supporting Gold Star families.

Williams was further honored in 2018 with the dedication of the Hershel "Woody" Williams VA Medical Center in Huntington, West Virginia, and by the U.S. Navy in 2020 with the commissioning of the USS *Hershel "Woody" Williams* (ESB-4). He will be remembered as an American hero and a member of the Greatest Generation. ■

Notes

1. "Description of Medals: Medal of Honor," U.S. Department of Defense, accessed 7 July 2022, https://valor.defense.gov/Description-of-Awards/.

2. "WWII Veteran Statistics," The National WWII Museum, accessed 7 July 2022, https://nationalww2museum.org/war/wwii-veteran-statistics; "Medal of Honor Recipients of World War II," The National WWII Museum, accessed 7 July 2022, https://www.nationalww2museum.org/war/topics/medal-honor-recipients-world-war-ii.

3. "Hershel 'Woody' Williams: Medal of Honor Citation," National Medal of Honor Museum, accessed 7 July 2022, https://mohmuseum.org/medal_of_honor/hershel-williams/.

Top: Medal of Honor recipient Hershel "Woody" Williams, 27 July 2019. (Photo courtesy of the Department of Defense) **Bottom:** Two Marine privates hit the deck to throw a scorching inferno at the mighty defenses that blocked the way to Iwo Jima's Mount Suribachi in February 1945. They are Pvt. Richard Klatt (*left*) and Pfc. Wilfred Voegeli. (Photo courtesy of the U.S. Marine Corps)

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