



**From Future War to Future Peace**  
**A Critique of USAF Major General Robert Latiff's Account**  
**of the Role of New Technologies in War**  
George R. Lucas jr.  
*United States Naval Academy, Maryland*

**Abstract:** In this essay, I consider Gen. Robert Latiff's overall position on increased reliance upon presently emerging military technologies. I argue that understanding the normative positions (largely cautionary in nature) in his most recent book depends upon evidence and descriptions of the kinds of military technologies in question, their current and likely future use in combat or combat readiness, and the evidence he adduces for his fear that the globalization and proliferation of these various technologies will make wars themselves easier to fight, and therefore more likely to occur. Those descriptions in his first book from 2017, however, do not provide a sufficient warrant for the normative conclusions in his second, most recent book from 2022. Notwithstanding, both books provide a wealth of insight into the proliferation and complexity of new military technologies, their impact on the violence and destruction caused by armed conflict, and accordingly, their current and projected uses in present and future conflicts.

**Keywords:** Latiff, Robert H.; Moore's Law; military technology; grey war; tactical nuclear weapons; enhanced human warriors; diplomatic compromise.

The approach I have chosen to Gen. Robert Latiff's work is grounded on the observation that he himself is a systematic thinker engaged in a large and complex project.<sup>1</sup> He did not decide first, for example, to write about war and technology, and then subsequently turn to separate the question of military technology and the attendant prospects for peace. There is a connection, a thread of argument, a trajectory that connects his present work (to which this special issue of *Existenz* is devoted) with his previous work, *Future War*.<sup>2</sup> Contemplating

that entire trajectory yields more insights into the overall technology threat matrix he describes than can be discerned from either book in isolation.

The most recent volume offers Latiff's normative arguments about the threat to peace posed by the proliferation of exotic military technologies. He criticizes the excessive confidence of military and political leaders in the strategic advantage afforded national security through deploying these technologies, and the relative indifference of the wider public to their threats. Those conclusions stem from his detailed description of the rapid emergence and increasing reliance on them by militaries worldwide, resulting from misplaced confidence in the presumed tactical advantages of those technologies, as originally recounted in his book *Future War*. In that first book, the chief concern is that the pace of innovation

<sup>1</sup> The views expressed are those of the author and do not necessarily reflect those of the United States Navy, the Department of Defense, or the United States Government

<sup>2</sup> Robert H. Latiff, *Future War: Preparing for the New Global Battlefield*, New York, NY: Alfred A. Knopf, 2017. [Henceforth cited as *FW*]

and adoption of them is often reckless and poorly thought through, and that the globalization of these technologies will likely render wars themselves easier to fight, and henceforth, more likely to occur:

We are at an inflection point...and we may not get a second chance. The future of warfare is coming fast... [In this complex technological environment] if ill-informed politicians speaking platitudes and clichés are the only decision-makers, we may find ourselves in wars we should not fight and cannot win. [FW 145]

If there is evidence to support the normative concerns subsequently put forth by Latiff in *Future Peace* and discussed in this symposium,<sup>3</sup> such evidence must be partially if not wholly found in the description of the various distinct military technologies themselves, together with their rapid proliferation and globalization as recounted in the earlier book. *Future War* does indeed offer fascinating and sometimes unnerving accounts of the technologies themselves, ranging from human soldier enhancements and potential biological weapons to ever-more sophisticated artificial intelligence software increasingly embedded in conventional or futuristic weapons, from drones to killer satellites, giving them greater capacity and increased autonomy of operation. There is more than ample documentation, moreover, that both the pace of these innovations and the scale of their adoption on the battlefield have both increased by orders of magnitude over a remarkably short period of time, an observation that technological pundits, such as Peter W. Singer, invariably cite as a generalization of Moore's Law.<sup>4</sup> Finally, Latiff offers very insightful accounts of what "future wars" fought with a force mix of biologically and pharmacologically-enhanced human warriors and autonomous, so-called "intelligent" robots might resemble.

However, no uncontested assessment is available regarding to what extent these vivid and detailed technological descriptions provide evidence that the number and scale of conflicts world-wide owing to this revolution has increased, or likely will increase. Likewise, it remains an undecided issue to what extent

wars themselves have become not just ever more likely, but more likely largely owing to the technological innovations described by Latiff. After all, this is arguably a reasonable surmise, as well as a highly likely outcome. Many commentators, including other participants in this symposium, seem to accept this inference without dissent.

But that is all it is: an inference. It is conjecture, speculation, and barely a plausible induction from the evidence provided. Philosophers of science might opine that any conclusions offered in the form of these normative concerns in *Future Peace* are largely underdetermined by actual circumstances and evidence. They might also observe that establishing such a claim would amount to proving a counterfactual—a very difficult task. One might go even further than that and argue—following the historical trajectory in the evolution of military technology that Latiff traces from the Napoleonic Wars to WW I and II—that there is no concrete or decisive evidence that technologies or technological innovations themselves cause war—neither their emergence, nor their existence, nor their proliferation or distribution—surprisingly, none of these might contribute to the causes or frequency of war itself.

Wars are political and economic phenomena that have purely political or economic origins, or both. They occur at whatever frequency they do owing to the ability and willingness of contending adversaries to strive for diplomatic compromise or resolution, reach a mutually-agreeable economic settlement, or to grow frustrated (or desperate) and resort to armed force instead. Wars occur at the frequency that they do owing to human failings and vulnerabilities, and not at all because some newly-invented gizmo is discovered to have military utility. Reaching back even further to Galileo Galilei, arguably humankind's first modern defense contractor (if not all the way back to Archimedes) one can see that the invention of the telescope did not cause, or increase the incidence of naval warfare. Galileo, like most engineers, happily accepted the Venetian Navy's grant funding to invent an instrument that helped them prevail decisively over their Ottoman adversaries, blasting the Turkish Navy out of the water over the visible horizon before its ships ever hove into view. Subsequently Galileo aimed his innovative new military technology toward the heavens and discovered the moons of Jupiter which proved to be yet another civilian spin-off of military technological innovation.

<sup>3</sup> Robert H. Latiff, *Future Peace: Technology, Aggression, and the Rush to War*, Notre Dame, IN: University of Notre Dame Press, 2022. [Henceforth cited as *FP*]

<sup>4</sup> Peter W. Singer, *Wired for War: The Robotics Revolution and Conflict in the Twenty-first Century*, New York, NY: The Penguin Press 2009, pp. 97-102, <https://www.c-span.org/video/?285698-1/wired-war>.

I think that this widespread fallacy that can be heard frequently—invoked with the emergence of each new technological innovation—confuses cause, occurrence, and frequency (incidence) with characteristics: what a prestigious Oxford University research center terms "the changing character of war."<sup>5</sup> The degrees of violence, savagery, destruction, loss of life—civilian casualties in particular—these are unquestionably affected considerably by technology, as are the likely but not inevitable outcomes of conflict, such as victory, defeat, or exhausted stalemate. These factors are what emerging military technologies profoundly affect in the wars that do occur, whatever their cause, and whatever their frequency might be.

Yet that is a different matter altogether. One can marshal considerable evidence (as Latiff clearly does) that new military technologies are drastically transforming the nature and character of warfare itself, along with the capacities, capabilities, and challenges faced by combatants themselves. There is no question that the bulk of such transformations from the Napoleonic wars to World War II and Korea, and perhaps Vietnam, have been for the worse: cruel and grievous battlefield injuries, untold numbers of civilian and combatant deaths resulting from nuclear, chemical, or biological weapons, sonic and ultrasonic weapons, and so on. Sometimes, however, the individual transformations can be for the better (enhanced protection, resilience, self-defense against more conventional attacks, rapid evacuation of wounded combatants, recovery from grievous battlefield injuries, reduction of civilian casualties).

The overall character of warfare itself (up until at least the recent Ukrainian conflict) seemed profoundly transformed by emerging technologies, morphing from conventional to hybrid war, grey war, insurgencies, and what Latiff identifies as the Third Offset war, referring to the three offsets of U. S. military advantage against its adversaries; for instance, the First Offset included the technology of nuclear weapons, the Second Offset included the introduction of precision-guided munitions and the

Third Offset strategy will depend on its innovative use of information technologies, autonomous systems, robotics, cyber techniques, nonlethal weapons, and high-speed weapons, [FW 27]

David Whetham identifies these new features collectively as constituting a throwback to a tactic in medieval warfare called *Chevauchées*—small skirmishes carried out here and there as efforts to degrade or immiserate the territory of an adversary.<sup>6</sup> Today's versions of waging war in the grey zone are similarly characterized by constantly simmering, low-level violence and destruction; particularly through relentless cyber-attacks.

In some respects, the role of technological innovation has indeed been to lessen the occurrence and frequency of larger wars. The strategic nuclear standoff of mutual assured destruction between contending nuclear superpowers is often credited with having prevented the outbreak of a third world war over ensuing decades. That is not a complete account: the standoff merely forced conflict into new forms, with or without technological means to pursue them. World conflagrations were replaced instead by proxy wars, cold wars, insurgencies, and terrorism that were oftentimes carried out with only the most primitive technologies.

Once again, it proves difficult to demonstrate or validate a counterfactual. To what wars can one point, for example, that were fought because humans built remotely-piloted vehicles or precision-guided weapons, or other innovations that, at the time, were likewise predicted to make wars easier to fight, and therefore more frequent? There are no such instances that could be identified. At best, as in the nuclear instance above, one could identify a war that was likely not fought because of technology, however, with the caveat that both adversaries had equal access to utilize said technology.

Perversely, even if accurate, this does not fully encompass the whole truth. Growing up on or near military bases when children, both Gen. Latiff and I experienced the ad campaigns that publicized and promoted those facilities with the seemingly oxymoronic slogan: "Air Power (and subsequently, "Aerospace Power") for Peace." Yet that slogan ended up being a valid claim, largely because it turned out that our government could not use the weapons they were building. Hydrogen bombs and ICBMs

<sup>6</sup> David Whetham, "Cyber Chevauchées: Cyber War Can Happen," in *Binary Bullets: The Ethics of Cyberwarfare*, eds. Fritz Allhoff, Adam Henschke, and Bradley Jay Strawser, New York, NY: Oxford University Press 2016, pp. 75-88, here p. 80.

<sup>5</sup> <https://www.warandpeace.ox.ac.uk/centres-and-programmes/ccw>.

and B-52's to deliver them, ended up being largely preventative, serving as incredibly expensive and dangerous deterrents, not facilitators for war.

Paradoxically, this led to a certain degree of frustration: "Why do we spend all our time and money building weapons that we can't use?" Since there might well be conflicts in Post WWII Europe in which the United States might indeed need to fight, the defense procurement process that Gen. Latiff describes formulated the need for tactical nuclear weapons. These much smaller (yet still incredibly destructive) weapons were designed and deployed. But at least so far, they have never been used and they did not serve to bring about wars that otherwise would not have occurred. Subsequently, neutron bombs (described by critics as the perfect Capitalist weapons, that would incinerate enemy personnel but leave their weapons and structures largely intact) and Stealth Bombers to deliver them were envisioned. The neutron bomb itself was never fully produced, and the Stealth Bombers were not employed in combat to any extent prior to the controversial NATO air campaign in Kosovo, many years later (and then only sparingly). Meanwhile, the United States proceeded to manufacture precision guided weapons, that is, bombs that could be used individually and be guided to their targets exactly. Hence, if the United States were otherwise drawn into a war (as in the first Gulf War in 1991, prompted by Iraq's president, Saddam Hussein, invading Kuwait) we could use them, and did so to great effect. Those new technologies, that is to say, helped put a stop to a war that did itself not occur because of these technologies, but for perfectly conventional, if convoluted, political reasons.

The interesting thing to notice in these recent phases of technological innovation is that in the past, perhaps for centuries, technological innovations from the crossbow and trebuchet to machine guns and strategic bombers without question made warfare itself vastly more destructive and costly in lives and treasure. That frightening feature of emerging military technology's contribution to the character of warfare is likely the reason for the strong anti-technology bias in disarmament and nonproliferation discussions, even if it is not quite correctly described.

Yet, beginning with the frustration in the 1970s with weapons that were too destructive to be usable, the technological thrust changed direction 180 degrees toward the design and manufacture of weapons that

were smaller, more precise, and far less destructive. Owing to those novel new technologies such as precision bombs, remotely piloted aircraft, and the first robotic sappers, the wars that were fought for political and economic reasons, including counterinsurgency wars and anti-terrorist campaigns, involved far less death and destruction, both of opposing combatants and of civilians (and civilian objects) caught in the crossfire, than ever before. This has not been adduced to defend the frequently horrific death and destruction that did occur. Rather it serves merely to say that the technological innovations helped to lessen the scale and otherwise-indiscriminate nature of those tragedies overall.

The sinister feature was, hence, not the emergent military technologies, but the combination of this massive casualty reduction with the advent (post-Vietnam) of the all-volunteer military force. I firmly endorse that Latiff faults the situation that there is a noticeable disengagement and indifference of civil societies toward their militaries rather than a focus on innovations in military technology. In both books, Latiff describes and decries this increasing ignorance and disengagement of the wider public. A similar perspective is convincingly presented in a recent book by Michael Robillard and Bradley Strawser.<sup>7</sup>

The role, and perhaps the fault of technological innovations increasingly employed by an all-volunteer force is to insulate the wider public from the consequences of their leaders' international policies: Civilians are too indifferent and disengaged. The public seems quite content to let policy makers proceed, and to imagine that a show of force (regardless whether technologically enhanced or not) is more straightforward than attempts at diplomacy and compromise. Here I could not more fully agree, nor more wholeheartedly endorse Gen. Latiff's effort to educate and alert that same public to the military's efforts supposedly undertaken in their behalf. Shame on we U. S. citizens for not knowing, or genuinely caring.

In conclusion, the world is now witness, and we are bystanders, to two conflicts in which those policy-makers have carelessly or unwittingly played a role. Neither conflict, however, was brought about, caused, let alone made easier to enter on account of technological innovation.

<sup>7</sup> Michael J. Robillard and Bradley J. Strawser, *Outsourcing Duty: The Moral Exploitation of the American Soldier*, New York, NY: Oxford University Press, 2022.

The first, the Russian invasion of Ukraine, was thought to be the kind of brutal conventional war that most likely would never be fought again. I have described it frequently as World War I trench-warfare with twenty-first century digital upgrades. The novel technologies that are presently being employed are largely assisting Ukraine's military defenders to resist a much larger and conventionally better-equipped invasion force. But the availability of the technologies themselves is clearly making wars like this neither more frequent nor easier to fight. The second, the savage surprise attack by Hamas on Israeli border settlements outside the Gaza enclave on 7 October 2023, was stunning in its suddenness and brutality, but not on account of the relatively conventional technologies employed in the attack.

Nonetheless, the unstable equilibrium wrought by technological innovations in artificial intelligence and cyber security of which Latiff warns (*FP* 33-5) do certainly pose a clear and present danger, a nuclear-holocaust-like situation brought about largely as consequence of automation and the increasing reliance

on artificial intelligence. Even if humankind lived with this instability heretofore in the nuclear case and somehow managed to survive—perilously dependent upon the discerning commonsense judgment of a few individuals such as Soviet LtCol Demitri Petrov (*FP* 9-10)—this does not guarantee that a disaster of a similar type can be avoided in the future. Current and future technological innovations now increasingly generate the risk of accidents and political misperceptions. I cannot see a benefit in deliberately and thoughtlessly increasing that risk. What might help humankind avoid this in the future is establishing for the first time a rigorous lifecycle review by way of a Test and Evaluation, Verification and Validation (TEVV) regime for artificial-intelligence-enhanced weaponry, designed both to uncover and rectify the vulnerabilities, and to define rigorous accountability and responsibility for both. The Institute of Electrical and Electronics Engineers (IEEE) and the United Nations Convention on Certain Conventional Weapons (CCW) are at work on such a regime at the time of writing this contribution, and it could not come too soon.