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Citation

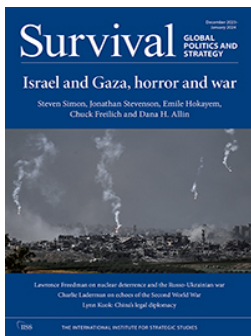
Milevski, L. (2023). The primitivisation of major warfare. *Survival*, 65(6), 119-136.
doi:10.1080/00396338.2023.2285607

Version: Publisher's Version

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Downloaded from: <https://hdl.handle.net/1887/4210856>

Note: To cite this publication please use the final published version (if applicable).



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To cite this article: Lukas Milevski (2023) The Primitivisation of Major Warfare, *Survival*, 65:6, 119-136, DOI: [10.1080/00396338.2023.2285607](https://doi.org/10.1080/00396338.2023.2285607)

To link to this article: <https://doi.org/10.1080/00396338.2023.2285607>



Published online: 04 Dec 2023.



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The Primitivisation of Major Warfare

Lukas Milevski

In an interview in February 2023 about the ongoing Russian invasion of Ukraine, American General David Petraeus claimed that, ‘with a few exceptions, Ukraine is not the future of warfare’, adding that ‘in large measure, it is what we would have seen had the Cold War turned hot in the mid-1980s – with largely Cold War weapons systems (albeit with some modernization)’. The exceptions he identified included drones and fire-and-forget missiles, which after initial targeting and launch fly to the target without further input from the operator. He further asserted that any future great-power war would have all this and more, and at higher levels of technological capability and sophistication.¹ Such comments follow many other technological visions of future warfare, most of which have been American.

These visions may be magnificent, but they do not reflect actual warfare, let alone major warfare. Warfare consumes and destroys, both through enemy action and through countering enemy action, and major warfare does so at rates that Western militaries have not experienced for decades. Yet the implications of such consumption and destruction are rarely considered when anticipating the warfare of the future. For small militaries, the danger of the simple attrition and destruction of their military capabilities is clear. Medium and larger militaries face a different problem: not attrition

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and destruction, but attrition and primitivisation. Through consumption and destruction, major warfare can turn the military organisations involved into more primitive versions of themselves. This is a multidimensional challenge for militaries and their support systems, touching on concerns ranging from defence-industrial capacity to force employment and strategy.

Sustained major warfare primitivises militaries

What does it mean to say that major warfare primitivises militaries? To be primitive is to be less advanced, usually technologically but often also socially or organisationally. Major warfare, a phenomenon with which the West had little engagement, intellectually or actually, between the end of the Cold War and the second Russian invasion of Ukraine in 2022, has the power to primitivise militaries. The stresses of sustained major warfare, particularly but not exclusively as imposed by battle, erode the involved military organisations technologically, socially and organisationally. Militaries as a whole, and specific formations in particular, may become less technologically advanced, less socially cohesive and less organisationally effective as a result of engaging in sustained campaigning against a major opponent, ultimately resulting in declining military effectiveness.

The social and organisational dimensions of primitivisation are likely to have affected armies since times immemorial, as they pertain primarily to the personal and professional relationships among individuals within organisations. The primitivisation of social ties can undermine the group cohesion generally understood to be required for soldiers to fight effectively on the battlefield. The sources of such cohesion remain debated, but may include personal ties among the so-called primary group, emotional ties to professional or other identities, and a group orientation toward task completion.² Sustained major warfare threatens social bonds, particularly within front-line units, through sheer attrition. The primary group may be destroyed, the sense of belonging to a particular group which should not be shamed through poor performance may be lost, and the sense that tasks can be plausibly completed erased.

Attrition affecting front-line units affects not only their own tactical and operational performance, but also that of their parent formations, thus

transforming social primitivisation into organisational primitivisation. The loss of leaders and other specialists performing particular duties does not merely affect the social dimension of the organisation, but also impedes its overall functionality as leaders and other specialists are replaced by those who are less well trained, less experienced or less competent. Notably, while this loss of social and ultimately organisational cohesion can be expected to negatively affect the unit's tactical performance, it also decreases the chance of mass disobedience to orders. Disobedience also requires cohesion.³ Primitivised formations may have lost some degree of effectiveness, but they are also less likely to pose a threat to their own government.

By contrast, the technological dimension has become a peculiar feature of *modern* major war as technology has become sufficiently complex to limit the manufacture of particular weapons systems. As equipment becomes more complex, it becomes more expensive; as both complexity and cost escalate, so too do production time and difficulty. The result is fewer units produced. This is as true of ordnance and munitions as it is of tanks and aircraft. If complex equipment is deployed and either consumed or destroyed on the battlefield, it is more difficult to replace than less complex equipment, which may then replace it. In this sense as well, militaries that sustain attrition in major operations can become more technologically primitive over time.

Crucially, the primitivisation of any armed force is not a matter only of its losses in the field and the significance of those losses for the immediate tactical–operational effectiveness of the relevant formations. Ideally, military power should be durable; the forces employed in war should survive in strategically useful condition through to the end of the war. This requires sustainment, over an undeterminable longer term, to replace both human and equipment losses. Yet as the equipment used by soldiers, and the training required to perform effectively on and off the battlefield, become more sophisticated, sustained major warfare necessarily becomes more difficult for any particular military organisation. Primitivisation also pertains to defence-industrial, procurement and personnel policies. Circumstance-appropriate policies, together with the infrastructure to implement them, may ameliorate primitivisation, whereas inappropriate policies and insufficient infrastructure will certainly encourage it.

Two modern examples demonstrate the full breadth of primitivisation in major warfare: the Wehrmacht on the Eastern Front during the Second World War and the Russian army in Ukraine today. Omer Bartov, in discussing the barbarisation of the Wehrmacht in the Soviet Union, depicted how staggering attrition hollowed out German formations, to the point that at least some divisions, such as the 12th Infantry Division, suffered more casualties over the course of the war than there were men present in its ranks during the initial invasion in 1941. Front-line German units could not hold continuous positions, battalion commanders floated around without battalions to command, companies were led by young and inexperienced officers rather than experienced non-commissioned officers, and increasing numbers of non-combat troops and poorly trained replacements were pushed into the fight.⁴ As both social units and organisations, German formations were gradually broken down by the demands of sustained major warfare. This attrition afflicted the Wehrmacht technologically as well, a process which Bartov described as ‘demodernisation’. The Wehrmacht’s modern elements were concentrated into a few armoured divisions, which throughout the war were repeatedly attrited to the point that much of the time they could no longer honestly be described as armoured divisions.⁵ Ironically, just as this multidimensional process of primitivisation began afflicting the Wehrmacht in the east from winter 1941–42 onward, its (defensive) combat power improved.⁶ Certain consequences of primitivisation can be ameliorated, if not truly solved, through influences such as ideology – as was the case with the Wehrmacht, for which increasing ideological ferocity was able partly to compensate for qualitatively and quantitatively deteriorating forces and technology on the battlefield.

Russia has suffered similarly in Ukraine. As leaks from the US Department of Defense in early 2023 showed, Russia’s *spetsnaz* (special-forces) brigades had already been devastated by the war to that point. Three brigades were believed to have suffered an astonishing 90–95% attrition rate, with one seemingly so ruined that, unlike the others, it could not be tracked returning to garrison in southern Russia from Ukraine.⁷ Similarly, by the time of its involvement attacking Vuhledar in early 2023, Russia’s 155th Naval Infantry Brigade had been substantially destroyed perhaps eight times

because of the repeated use of poor tactics.⁸ Although it is more difficult to assess Russia's contemporary military strength than Germany's in the 1940s, it seems probable that the Russian units that have suffered so much have been greatly primitivised, socially, organisationally and technologically. Indeed, Russian tactical adaptations seem to point to this conclusion, as Russian forces are increasingly distinguished as 'line', 'assault' and 'specialised'. The line units comprise poorly trained, recently mobilised men, soldiers from the two so-called separatist republics, and conscripted convicts, whose primary purposes are to hold ground and die. This focusing of attrition and primitivisation onto the line infantry has in turn enabled Russia to at least partially rebuild its relatively elite units for major actions or specialised functions, such as conducting assaults and artillery spotting.⁹

*Russian units have been
greatly primitivised*

The primitivisation of the Russian army in Ukraine was most clearly visible, from an open-source perspective, in the pattern of engagements revealed in the many photos and especially videos of combat published over the course of the war thus far. Early Russian tactical behaviour emphasised armoured vehicles in substantial quantities, including actions from Bucha to Brovary, Bilohorivka and the Russian rout arising from the Kharkiv counter-offensive. The consequences of the staggering tally of Russian vehicular losses up to their withdrawal over the Dnipro River and the liberation of Kherson were made apparent after the appointment of General Sergey Vladimirovich Surovikin as commander of all Russian forces in Ukraine in early October 2022. Surovikin's tenure as overall commander coincided with a generally more defensive Russian posture as Moscow sought to avoid further substantial losses of territory. The Russian army still attacked, most notably toward and in Bakhmut, but the available footage of Surovikin's limited offensives revealed a disproportionately infantry-based force. Armoured vehicles appeared in video evidence primarily as taxis bringing infantry to, and then disgorging them upon, the battlefield before skedaddling as quickly as they could. In other words, if the videos are at all representative, the Russian army had been primitivised by November 2022 to the extent that armoured vehicles seemingly

became, at least temporarily, too precious to lose in battle. This state of affairs led the German reporter Julian Röpcke to assert that ‘the last three months have shown that Ukraine’s strategy of “killing as many Russians as possible to stop them” has not worked’, though he evidently failed to recognise the degree to which this was not at all Ukraine’s choice but a reality apparently forced upon it by changes in Russia’s tactics and force employment.¹⁰

Surovikin was replaced by the Russian Chief of Staff Valery Gerasimov in January 2023, though he carried on as the latter’s deputy. A near-immediate change of tactics followed. Apparently belying its general primitivisation, the Russian army again threw machines into the line of fire. Scenes resulted at Vuhledar, Avdiivka and Marinka that were reminiscent of the armoured apocalypse at Bilohorivka a year earlier. In a plausible attempt to save machines in favour of losing mostly soldiers, in April 2023 the Russians switched from trying to encircle Bakhmut to urban fighting and squeezing the Ukrainians out. The primary outcome of Russia’s winter offensive under Gerasimov’s leadership was temporarily to re-accelerate the primitivisation of the army that Surovikin had sought slowly and partially to address. Despite Gerasimov’s detrimental impact on at least some Russian formations (most notably the 155th Naval Infantry, which suffered heavily at Vuhledar), some observers have noted that Russia is beginning to re-equip certain battered units with brand-new equipment.¹¹ The Russian experience may yet demonstrate that primitivisation may be a partially ameliorable phenomenon for select formations even as others primitivise further, echoing the Wehrmacht’s experience on the Eastern Front.

Ukraine’s summer 2023 counter-offensive had, by the time of writing, been conducted in a slow and methodical manner, owing to a desire to avoid human casualties and material losses. Such a humane approach necessarily springs from multiple considerations, but among them is probably a concern about primitivisation. The Ukrainian army has so far been able not only to avoid primitivisation but actually to increase its average technological and perhaps organisational level as a result of Western aid, whether in the form of heavy equipment or training. Yet such Western aid remains limited compared to the actual demands of major warfare, resulting in a comparatively modern and sophisticated force concentrated in a few brigades – much like the Wehrmacht

or the Russian army – yet which might still easily suffer major losses and therefore experience primitivisation due to poor luck, carelessness and the like.

Primitivisation is not a definitive process, even in the short term during wartime; it can be ameliorated by emphasising other factors, such as ideology, which can provide new reasons not only to continue fighting, but to fight even harder. Another key coping mechanism, seen in the German, Russian and indeed Ukrainian examples, is the creation of a two-level force, with modern equipment and sometimes better-trained or otherwise privileged soldiers concentrated in particular units – German panzer divisions, Russian airborne divisions, the new Western-armed Ukrainian brigades – while the rest of the force makes do either with increasingly less or increasingly older, less reliable equipment. Primitivisation also affects force employment tactically and operationally, with an emphasis on preserving the modern forces in particular when possible and therefore using them primarily as reserves to put out fires or to conduct particular offensive operations that less modern forces may not be able to achieve on their own. Primitivisation may also be associated with defence; once primitivised, both the Wehrmacht and the Russian army in Ukraine predominantly fought on the defensive, with substantial offensive actions such as the major Russian attacks at Avdiivka in October 2023 proving to be accelerants of further primitivisation.

Primitivisation, campaigning and Western militaries

Other than in the instances already described, the West has not had to consider the prospect of the full-spectrum (social, organisational and technological) primitivisation of its armed forces for decades, perhaps not since the British retreat from the beaches of Dunkirk. A major exception may be the US Army during the Vietnam War, where the unpopularity of the war combined with the staffing policies implemented by the army led to the constant rotation of personnel through units such that the social aspect of military organisation suffered, with drug abuse or the fragging of officers becoming rife within some units at certain times.

Having mainly confronted foes that were both militarily inferior and geographically distant since the end of the Cold War, the West as a whole has

been slimming down its military and defence establishments for years. In recent decades, the emphasis has increasingly been on professionalism and high technology, resulting in a comparatively low mass of soldiers and major weapons systems. The Revolution in Military Affairs and associated concepts thrilled many military specialists, often leading to fantastical strategic thinking. David Deptula pronounced that developments such as effects-based operations meant that the ‘character of warfare is changing and the degree of that change is considerable – analogous to the difference in world views between Ptolemy and Copernicus’.¹² Max Boot praised the resulting ‘new style of warfare that eschews the bloody slogging matches of old’.¹³ The underlying assumption has been that technology can not only solve tactics and strategy, but do so at minimal cost to oneself – and even to the enemy.

To this day, Western visions of future war tend to emphasise technology. This is particularly true of American visions, with the other NATO allies tagging along to some degree, even if only out of necessity for Alliance interoperability. At the 2019 Mad Scientist Conference at the University of Texas at Austin, for example, Robert Work, one-time US deputy secretary for defense, presented a vision for ‘algorithmic warfare’, which he claimed will be

characterized by combat operations transformed by universal digitization and widespread use of machine intelligence in both systems at rest and systems in motion, leading to new forms of *human-machine collaboration* and *human-machine* and *machine-machine combat teaming*, and the more powerful *collaborative human-machine battle networks* they enable.

He urged military leaders to ‘NOT pursue optionally manned combat systems except for legacy platforms that commanders are willing to lose’. Instead, he suggested they should ‘pursue optionally teleoperated robotic combat systems as a bridge to better autonomous control systems’.¹⁴

Such lofty technological fantasies implicitly ignore the enemy and its capability to do harm to one’s own military, generally because the West’s wars since the end of the Cold War have been so militarily lopsided. Yet to assume that this will continue into the future is excessively optimistic; any good reading of history demonstrates that such strategic optimism is rarely

justified.¹⁵ The general belief that higher technology minimises losses may have some merit, but must still be critically examined. High technology will not and cannot altogether preclude the possibility of losses in major future wars that may trigger primitivisation.

Western (and especially American) expectations about technology are premised on the experience of an immature military revolution. Perceptions of a supposed precision-strike revolution have been coloured by the Western experience of precise warfare against woefully unprepared enemies in Iraq in 1991 and 2003, Serbia during the wars surrounding the collapse of Yugoslavia, Afghanistan in 2001, Libya in 2011, and protracted insurgencies in Iraq and Afghanistan. There has not yet been an instance of symmetrical precise warfare, though Ukraine is arguably adopting aspects of such warfare as the West supplies it with certain classes of precise munitions. John Maurer has suggested that the tried-and-failed British concept of 'broken-backed warfare' from the early days of the atomic era may be appropriate for thinking through the strategic problems of precise warfare among peers. According to this logic, mass precision munitions will disrupt but not conquer, and so are unlikely to coerce; precision arsenals will deplete; and the surviving conventional militaries on both sides will ultimately still have to engage each other directly.¹⁶ In imagining such an essentially primitivised strategic future, Maurer also makes a crucial point about the limitations of our engagement with precision warfare to date: it has been too asymmetrical to draw firm lessons from.

In addition to being technologically asymmetrical, Western experience since the end of the Cold War has tended to involve limited interventions against sometimes staggeringly incompetent or otherwise relatively incapable adversaries. Such incompetence can magnify the impact of high technology, especially when that technology is used skilfully. This is Stephen Biddle's argument about the Gulf War. Technology alone cannot explain the disproportionately asymmetrical result of that conflict; the Iraqis also made outrageous tactical mistakes, and coalition forces were skilled enough to take appropriate advantage.¹⁷ Such mistakes were not restricted to the battlefield: the Iraqis allowed the United States to build up its forces in Saudi Arabia unmolested. Similarly, during the break-up of Yugoslavia, Serbia had no

ability to impose its will on NATO, except by attacking its own neighbours. Libya too had no opportunity to upset the Western intervention in 2011. Thus, with the exception of the insurgencies in Iraq and Afghanistan, the West has largely been able to determine the main pattern of recent operations with little or no interference. As a result, the effectiveness of high technology was easily maximised from the beginning of hostilities. Such circumstances are unlikely to be present in the major wars of the imaginable future.

Instead, such wars are likely to be alliance-centric defensive wars, possibly involving the defence of Europe against Russian aggression or Taiwan against Chinese predation. These are hypothetical wars which, for the West,

would start when the *enemy* is ready, not the West.

Western participants will have to react, defend and counter-attack. This presents different tactical, operational and strategic challenges than do discretionary interventions in which the West can generally act when ready, and usually from a distance,

a strategic advantage that translates into a tactical advantage. The character of both defensive and offensive battles in future major wars is likely to differ from this kind of experience, raising questions about the fitness of Western, and especially European, militaries to wage them.

To mount an effective defence in future major wars, Western militaries, especially armies, will have to get in the way and stay there. High technology may put some Western artillery on the periphery of, or sometimes even beyond, an adversary's own artillery range, but that will only partially insulate Western artillery from attack. The further forward any formation's subunits are, the more subject they will be to fire and, therefore, to losses, whether human or material. When counter-attacking, Western militaries will have to go out into the open and close with the enemy, perhaps over prepared ground against fortifications and minefields. If the enemy stands and fights, something which should be expected, Western forces will have to engage in close-quarters combat to liberate stubbornly defended ground from occupying troops. Firepower can kill and disrupt, but not conquer.

Human and material losses will result that high technology will be able only partly to prevent or mitigate – especially in land forces, which

*Firepower can kill
but not conquer*

are usually required to make and maintain contact with the enemy. Yet the alternative to absorbing casualties may be tactical failure. An overemphasis on force protection may undermine a force's ability to fight and, ultimately, win. Western military power, and land power in particular, has oscillated since the end of the Cold War between heroic and post-heroic modes of engagement. Major wars are almost inevitably heroic, yet heroism usually comes at a cost.¹⁸ The West's experience of casualties and material losses since 1990 is unlikely to reflect the battlefields of future major wars.

Christopher Lawrence has analysed the relationship between force size and average daily casualty rates for American forces during the Second World War, finding that companies (about 200 personnel) averaged 21% casualties per day, battalions (800) 9.5% and brigades (3,000) 2.6%.¹⁹ If average daily casualty rates in major future warfare are even a substantial fraction of Lawrence's figures, one wonders how long Europe's readily deployable forces might last on campaign. This is a particularly pressing question given that casualties will inevitably be highest among front-line forces, which themselves represent only a limited portion of larger formations. Historically, the combat worthiness of a battalion or even a brigade can be run down relatively quickly in intense fighting, even as most of the rest of the formation continues to function.

Western but non-American militaries may be both too slimmed down and too technologically complex to sustain the sorts of losses which major future warfare may impose without suffering primitivisation. This is particularly true in the context of hypothetical wars against Russia or China, with their mass armies. Jack Watling of the Royal United Services Institute has observed that, in terms of artillery, the British army is 'comprehensively outgunned and outranged' by the Russian army. It appears that any single standard Russian motor-rifle brigade can be expected to field more organic heavy firepower than the entire British army combined.²⁰ Other major European armies are not in significantly better condition artillery-wise relative to potential major foes, especially given their contributions to the Ukrainians, which have substantially, albeit temporarily, decreased many countries' artillery parks. For example, France has donated 30 CAESAR self-propelled howitzers of the 76 it had at the beginning of 2022, and

Germany 14 of its 121 PzH 2000s.²¹ Despite the artillery losses it has suffered in Ukraine, Russia can still deploy artillery, however technologically inferior, in overwhelming numbers against such comparatively small European artillery forces. The story is similar for personnel and also, albeit to a lesser extent, for heavy armour.

The end result in tactical terms is likely to be that, whether on the defensive or offensive, superior hostile firepower will inflict casualties, even if Western forces ultimately win the battle. European forces in particular simply may not have the available firepower, whether tubes or munitions, to engage all relevant targets before they become a direct threat. The role airpower could play is unclear. Western airpower is certainly more potent than any adversary's, both technologically and tactically, but Western militaries are still unlikely to have the near-perfect freedom in the skies which they have enjoyed for decades, particularly before the US Air Force gets involved to suppress or destroy hostile ground-based air defence. Moreover, ammunition is even more important for airpower than ground-based firepower. European air forces largely ran out of munitions less than a month into the intervention in Libya in 2011.²² US ordnance stocks were severely challenged by the campaign against the Islamic State.²³ Any warfare against a major hostile power would represent a far more target-rich environment than Libya or Islamic State territory. Yet this represents another key aspect of primitivisation: not only can artillery and air forces be expected to fire or release dumb shells or comparatively primitive bombs after having unleashed their full precision stockpiles, but ammunition usage is also likely to skyrocket and deplete ammunition stockpiles even faster.

Moreover, European forces cannot afford to take losses, because each loss would represent a proportionally larger amount of available firepower, personnel or other military capability as compared to similar losses by their massed adversaries. Due to its relatively sclerotic defence industry, Russia has had difficulty replenishing losses on the front line in Ukraine and has often done so with comparatively ancient equipment drawn from deteriorating Soviet stockpiles. Yet non-American Western militaries may not have the industrial capacity or the stockpiled resources to achieve even this much.²⁴ Western, and especially non-American, militaries represent the

high-tech yet fragile sharp ends of insufficient defence-industrial and logistical systems, especially when matched against the lower-technology and less fragile ends of the not quite as insufficient systems of rival powers.

Countering primitivisation

There is no doomsday warning here that Russia can, let alone will, conquer Europe. Even against no opposition, Russia would have nearly insuperable trouble sustaining a military advance beyond immediately neighbouring countries.²⁵ Yet taking primitivisation seriously is necessary to further the aim of improving resilience. The prospect of the primitivisation of Western armed forces in a future major war has widespread implications for defence-industrial, procurement and even personnel policies, as well as for force design. These implications have been thrown into stark relief by Russia's 2022 invasion of Ukraine.

The West is not ready for what some have called industrial warfare. Even the US is not ready, having made defence-industrial and procurement choices that have, at the very least, increasingly minimised certain ammunition types.²⁶ Even without any losses, Western forces will find themselves primitivised by having to use dumb and imprecise munitions after expending all their precise ammunition. The United States is taking steps to remedy this problem, but Europe is struggling to follow suit. Ammunition has been a major focus of the Western angst brought on by Russia's invasion, yet the same problem is present for all equipment. Europe cannot build artillery or tanks at the requisite scale or speed to sustain major warfare.²⁷ The US is better placed, having maintained huge stocks, but may find it challenging to sustain the materiel side of a major war as well. Countries concerned by technological primitivisation have two main alternatives: 1) develop the industrial might to sustain intense, long-duration, high-tech warfare; or 2) be prepared to revert to less high-tech warfare employing older stockpiles of military equipment, or have the industrial capacity to build less advanced equipment at scale. The US is broadly capable of embracing both options in time, whereas Europe is currently capable of neither.

Yet even if the industrial capacity is present to produce high-tech equipment at scale, without the trained personnel to operate it, militaries will suffer

primitivisation all the same. Virtually all Western militaries are concerned about force levels, though it has been suggested that such concerns are overblown, at least in the United States.²⁸ Western visions of future warfare tend to assume low casualties in the same way that they assume low material losses, in part because technology is expected to allow far fewer servicemembers to be in any danger at all, let alone lethal danger. Yet casualties in major warfare will occur, which will have both short- and long-term consequences for deployed formations that will need to cope with losses in the immediate tactical and operational circumstances, and to replace losses over the course of the campaign. Extensive attrition may lead to social and ultimately organisational primitivisation, causing the formation to become less effective.

Some services within Western militaries have been restructuring over the past few years to embrace new visions of future warfare defined by particular foes and particular technologies. The US Marine Corps, for example, has been undergoing a controversial force redesign aimed at countering China and embracing new technologies. The redesign includes reducing infantry and direct-support capabilities in favour of technology.²⁹ Such capabilities would no doubt be useful, perhaps necessary, in a conflict against China. Yet they will also make the corps more susceptible to primitivisation in any scenario involving human and material losses, which it would have difficulty replacing. A force that is designed around high technology alone, and that cannot function in the intended operational space without it, may be little more than a glass cannon.

Operationally, it appears likely that either the prospect or reality of primitivisation will slow down offensive operations. The mere prospect of primitivisation will haunt commanders on the attack, leading them to prioritise force protection as much as possible without abandoning the mission, although the mission's timetable will change, as has been seen in Ukraine's summer 2023 counter-offensives. Actually primitivised armed forces will have little choice but to move more slowly, as they will have already burned through their capability for major mechanised offensives, as appears to be the case for the Russian army in Ukraine. With primitivisation slowing offensives, they are likely to be less strategically and politically decisive, and therefore the war will go on.

Defensive operations will also be more difficult, even with slower offensives. Commanders are likely to be loath to risk their high-tech equipment in mundane defensive operations, which would necessarily increase the risk of primitivisation, and so may pull back relatively elite and well-equipped units to act as reserves. The Wehrmacht displayed this force-employment pattern on the Eastern Front, as have both Russia and Ukraine in their ongoing war. Yet the very act of presenting such a defence may give hope to each side that offensives may succeed, possibly very rapidly (as actually occurred on the Kharkiv front in early autumn 2022), thus bolstering the political will to fight.

* * *

Primitivisation is an under-recognised problem for modern militaries, the greatest example of which prior to 2022 was seen on the Eastern Front during the Second World War. Involving much more than a simple incapacity to manufacture enough tanks or ammunition, it is a multidimensional challenge to which Western militaries and their governments do not have real answers. Meeting this challenge will require a wide range of industrial and operational responses. It should also moderate the excessive technological optimism that has distorted Western defence thinking for at least the last 30 years.

Notes

- ¹ Peter Bergen, 'Gen. David Petraeus: How the War in Ukraine Will End', CNN, 14 February 2023, <https://edition.cnn.com/2023/02/14/opinions/petraeus-how-ukraine-war-ends-bergen-ctpr/index.html>.
- ² See Anthony King, 'On Cohesion', in Anthony King (ed.), *Frontline: Combat and Cohesion in the Twenty-first Century* (Oxford: Oxford University Press, 2015), pp. 3–23.
- ³ See Tarak Barkawi, 'Subaltern Soldiers: Eurocentrism and the Nation-state in the Combat Motivation Debates', in King, *Frontline*, pp. 27–8.
- ⁴ Omer Bartov, *The Eastern Front 1941–45: German Troops and the Barbarisation of Warfare* (New York: Palgrave Macmillan, 1986), ch. 1.
- ⁵ Omer Bartov, *Hitler's Army: Soldiers, Nazis, and War in the Third Reich* (Oxford: Oxford University Press, 1992), ch. 1.
- ⁶ *Ibid.*, p. 33.
- ⁷ See Alex Horton, 'Russia's Commando Units Gutted by Ukraine War, U.S.

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- 8 See Alia Shoaib, 'An Elite Russian Brigade of 5,000 Soldiers Has Been Destroyed and Reformed as Many as 8 Times After Heavy Losses, Report Says', *Business Insider*, 26 March 2023, <https://www.businessinsider.com/same-russian-brigade-destroyed-and-reformed-8-times-report-2023-3?r=US&IR=T>.
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 - 11 See Naalsio (@naalsio26), post to X, 22 June 2023, <https://twitter.com/naalsio26/status/1671626465996046338>.
 - 12 David A. Deptula, *Effects-based Operations: Change in the Nature of Warfare* (Arlington, VA: Aerospace Education Foundation, 2001), p. 17.
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 - 14 Robert O. Work, 'AI and Future Warfare: The Rise of Robotic Combat Operations', Mad Scientist Conference, University of Texas at Austin, 24 April 2019, emphasis in the original.
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 - 16 John D. Maurer, 'The Future of Precision-strike Warfare: Strategic Dynamics of Mature Military Revolutions', *Naval War College Review*, vol. 76, no. 2, Spring 2023, pp. 13–37.
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