Introducing Digital War: Ukraine, Russia and the Augmented Frontlines of the Future

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Digital war is coming of age, and fast at that. In 2019, William Merrin ushered it in as a new field of research focused on how warfare is entwined with digital tech. As the seminal book concluded, this integration was still in its infancy, presaging rapid and expansive development. Only one year later, Ben O'Loughlin (2020) heralded the arrival of post-digital war, which has already fully incorporated the digital.

This seeming incongruity is rather fortunate. At one and the same time, it shows the amplitude of our contradictory and partial perceptions of war, the fragmentariness of our knowledge and the positionality of our perceptions – while it also fits with digital war's own speed and its fluctuating, oscillating elusiveness. On the one hand, the elements, processes and practices that constitute it had already been present in the 2000s-2010s conflicts (the bulk of Merrin's cases and material), but their scope, intensity and impact had only partly demonstrated their full potential. Digital war's building blocks, to be sure, were already present; but the walls were yet to be raised while the physical walls were being razed in Syria, Yemen, Ukraine. On the other hand, the baby god of digital war was born old, instantly ageing into his weathered doppelgänger – more Janus than Mars. Is it not curious that this two-faced deity of Rome presided not only, as widely known, over change, transitions, beginnings and endings, but also over war and peace?

Echoing other similar deities from around the world, but especially in the Indo-European pantheons, such as the Norse Heimdallr or the many-faced Slavic god Sviatovyd, possibly portrayed in the famous Zbruch idol from Western Ukraine, the geminated Janus embodied a subtler, deeper understanding of war overshadowed by literality of the muscular and warlike Mars. Called the bringer of war and the bringer of peace, Janus was responsible for the ritual transitions between the two main aspects of Roman citizens: peaceful and law-abiding *quīritēs* and bellicose, soldierly *mīlitēs*. That there was a distinction and at the same time fluidity between them seems significant. Even more so is the consensus of classical authors that the doors in the principal temple of Janus that had to be open during wartime and closed in days of peace were in fact shut briefly only several times in all Roman history (Dumézil 1966). Permanent war, indeed!

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The complex dialectics of the constant to-and-fro between a citizen and a militant, especially within the context of the "permanent campaign" – a military one – of the kind we have witnessed emerge in recent decades, is especially relevant for

> […] the new military reality of full spectrum access. This is a new mode of participative warfare, where everyone can experience and take part in the conflict. […] Every interested person, of any age, experience, expertise, and qualification, can now fire their own hegemonic bullets in a fractal, digital infowar aimed at exposing their situation or promoting their preferred political interpretation (Merrin 2018: 196).

While of course derived from the sense "based on numbers", *digit*al war can also be thought of literally as "war of *digits*": fingers hitting touchscreens and buttons, flying over keyboards, tapping and tipping, clattering and clittering, as well as quietly pushing, swishing and swooshing. Whether it is a tap that will activate a life-ending grenade drop from a drone or one that will tweet a meme with a clink, here is the ultimate integration of kinetic combat and whole-of-society information warfare, united in one sensory and technical operation. The integration that is reaching now its full-blown form but has always been native to war as, in the words of Friedrich Kittler, "the concept of information itself has a military, strategic component. It is no accident that the age of media technologies is at the same time also the age of technical warfare" (Kittler 2010: 41–42).

In digital war, two major problems thus have emerged and come to the fore. These are technology and participation. Technology transforms warfare and is itself transformed and pushed further after its adoption through churning innovation cycles. Nowhere is the origin of technology unconcealed as clearly as in war, where the ingenuity at improvising and inventing new ways of killing and applying them warrants victory and the very survival. Here tech comes to its source in *téchne* as known by ancient Greeks, a cunning trick, practical art, skillful contraption. The cunning, however, belongs to all equally and democratically. The trick used to trap the enemy yesterday will be employed to vanquish its inventor tomorrow. The treacherous mechanics of *téchne* sends us directly to the μηχανόεν τέχνας from the famous "Ode to Man" chorus in Sophocles' *Antigone* (lines 365–366): "ingenious skill" with which man "moves now to evil, now to good"; a classical Platonic/Derrida theme of technology as "phármakon", both cure and poison.

Yet the ambivalence of technology also obliterates the cusp between the soldier and the civilian. Having done away with the distinction between civilian tools and weapons and indeed drawing ever more tools into its crucible to reforge weapons out of them, digital war smudges the line between a fighter and a noncombatant and accelerates the cycles of transitions between them. Technology thus facilitates

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the extension of war experience and participation, as war content and war media practices open up to new followers, consumers and participants.

In the accelerating coming-of-age of digital/post-digital war, sleights of hand change and become obsolete quickly. Many of the cases used to locate and map the field now belong to history, and new ones come to replace them time and again. But hardly any of them has disturbed the scholarly circles so much and turned so many dogmas on their heads as the Russo-Ukrainian War. Starting in a strange, as if carnivalesque way with the annexation of Crimea by Russian troops posing as "little green men", this fire took a long time to grow and could be contained at every step. It was not. Luhansk and Donetsk followed, and then, in 2022, the whole of Ukraine was flooded on the front with the length and intensity unseen in Europe since 1945. Far from hybrid warfare with its murky boundaries and definitions, it was every bit (and byte) as digital as the wars of the preceding decade – but much clearer, vaster, and better defined. Simultaneously, it was not internally consistent. In 2014, many Ukrainians did not own a smartphone, the internet connection was slow, and even 3G felt like a luxury. By 2025, the physical topography of the frontline is covered by a dense fabric of its electronic double, continuously live-streamed from UAVs to the command centers, the mobile networks in coastal areas are used to steer seaborne USVs, and the fields of battle are draped by the fine web of the optic fiber used to steer killer drones now.

So what kind of digital war is the Russia-Ukraine War? What does it tell us about digital war in general? What can we learn from it?

The Russo-Ukrainian War: Expanding the Context

Ukraine can boast a long history of military innovation. The legend of the tenth-century Kyiv Princess Olha who burned the city of her enemies by releasing birds with little torches fixed to them echoes in the modern concept of an FPV drone, ramming fireballs into buildings that shelter the foe on countless modern combat videos. In the seventeenth century, the innovative infantry tactics combined with light cavalry and artillery helped the Ukrainian Cossacks shatter such formidable opponents as Polish winged hussars, hardened Ottoman janissaries and dauntless Muscovite *strelcy*. Even around the nineteenth century's Age of Empire, during the Crimean War, the southernmost part of Ukraine became the focus of innovation in terms of both military tech and communication. This war is often seen as the first involving intensive and immediate press reporting. It also left Ukraine with the first railway on its territory, a military line built by the British.

Nor is the current conflict by any means the first clash between Ukrainians and Russians, whose ancestors battled many times. Since the infamous sack of Kyiv by Prince Andrey Bogolubskiy's northerners in 1169 (dubbed as "the Great Russian's first

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entry on the stage of world history" by none else as the Russian imperialist historian Vasily Klyuchevsky), the list has become rather long: Prince and Hetman Ostrogski's 1514 rout of the Muscovite cavalry thanks to the innovative use of firearms and artillery, Hetman Sahaydachnyi's siege of Moscow in 1618, the Cossack-Tatar defeat of the Muscovite army in the 1659 Battle of Konotop, the massacre of Hetman Ivan Mazepa's capital Baturyn by Russians in 1709, the ferocious bloodbaths of the 1917–1921 Soviet-Ukrainian War.

The best optics sometimes come from within, rather than from the external perspective, equally impartial (indifferent?) and ignorant. And while some Western observers are still awed by what they perceive as the absurdity or unnecessariness of the Kyiv-Moscow rivalry's current iteration, perhaps a more productive way to think about it is as the most recent act in "an unfinished war" (as George Shevelov noted quite prophetically). To quote a 2022 Ukrainian meme, "it was the third day of the eight-year war that has lasted three centuries". But perhaps, before looking into its technological black mirrors, we should ask ourselves what war we are discussing. And I do not mean, in the first place, a theoretical war, such as participative war or digital war. This discussion should start with the simplest: the particular name we use to refer to this war. Naming undoubtedly frames the named reality, and unfortunately, the idiosyncratic nomenclature around this war has developed misleading tendencies.

The conceptual abomination of "Putin's war" is telling and duly lambasted, but the seemingly innocent "Ukraine War" has made itself a cozy home in mainstream media. When we look at the war naming traditions, we will see that the names of wars are grouped into several large categories: based on the conflict's duration (the Hundred Years War or the Six-Days War), the belligerents (the Italo-Abyssinian War, the Franco-Prussian War), then those with a particular date (the Yom-Kippur War), those with funny names (the War of Jenkin's Ear), the ruler's name (Queen Anne's War), or the aim of the war (the numerous "wars of succession"). Those with a country name in it, as a single location, are colonial or somewhat colonial, or else with a set of belligerents too complex to be named: the Vietnam War, the Afghanistan War, the Iraq War, the Crimean War, the Korean War, the Falklands War. When we put "the Ukraine War" (no longer even limited to just Ukrainian territory) in this context, do we – subconsciously perhaps – admit it is a colonial war or that we are unable to understand and clearly name the agencies involved? Why are we unable?

I will leave answering these questions to the readers. Still, moving forward requires specific answers to other related questions on the character and type of the Russo-Ukrainian War, its evolution and transformation. Thankfully, we are now past the (not so) innocent idiocy of "the Ukrainian crisis", often rebaptized into "conflict", once again lost among (not so) complex adversaries in the hybrid war's hall of crooked mirrors. Nowadays, there are barely any alternatives to following the chronology exemplified by Ilmari Käihkö (2021), beginning with the 2014 an-

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nexation of Crimea and logically connected to the War in Donbas; they are both defined as a limited war. In a limited war, adversaries set a smaller military aim, to which they do not commit the full weight of their resources. Similarly to this, both Ukraine and Russia did not commit fully to the control over Donbas as their number one priority. Russia tried to act through proxies and paramilitaries while the Ukrainian government attempted to bandage the wound and pretend it did not exist, focusing instead, with mixed success, on internal reform (including that of the army). Donbas, and increasingly also Crimea, was one of the many policy issues, something for diplomats to spar over in otherwise respectable summits.

If the annexation of Crimea and the War in Donbas may be seen as an example of a limited war, then what about the current phase since 2022? Obviously, the scale got bigger. New war theatres were opened, new territories thrown into contestation. The invasion is often called "an existential war", certainly for Ukraine, which is manifested in multiple implicit and explicit statements of intent by top Russian officials and elite intellectuals, who variously declare the dismantling of the Ukrainian statehood, a partial restoration of the Soviet Union, or genocide of Ukrainians as the key priority (Shaw 2023). All with a notable consequence for the Ukrainian nation: its destruction as an independent entity. Russia, too, behaves as if it believes this war is existential for it as well. The rationale for the aggression against Ukraine is construed in terms of religious imagery turning it into a "sacred war", as demonstrated by Nadia Zasanska's chapter in this book. We should certainly question the relevance of these beliefs, but since this is what Russians tell the world and themselves, this is as good as true in the social context.

From limited to existential war! That is quite a step to make, and the 2022 invasion undoubtedly marks a dramatic expansion of the conflict. But where to, or perhaps, towards what? What type of conflict is this existential war? It would logically require the commitment of all the state's resources to a grand aim, which would make it a total war, or what the great old authority of military schools, Carl von Clausewitz, would recognize as "absolute war". Clausewitz has certainly come under critique in recent decades against the backdrop of RMA, new wars and rebalancing in the state-military-society triad. But I think we should separate Clausewitz from his interpreters and retain the ideas that still may be useful.

His most remembered definition is that of war as the continuation of politics by other means, but it is especially important for understanding digital war to focus on other, less handbook-promoted part of his definition where he highlights war as a form of communication:

> Do political relations between peoples and between their governments stop when diplomatic notes are no longer exchanged? Is war not just another expression of their thoughts, another form of speech or writing? Its grammar, indeed, may be its own, but not its logic (Clausewitz 2007: 252).

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In this context, war is not opposed to dialogue – in fact, it is a form of it. It is just a different language the nations shift to in their conversation when there is a mismatch between other languages and "messages" to be sent. Then states begin to exchange strikes the way they could exchange diplomatic notes, artistic exhibitions or poems. Thinking war as communication opens completely new avenues and connects it with representation, which can be understood twofold. One understanding suggests communicative representation, whereby salvoes, maneuvers and battles become akin to phonemes, words and phrases that always stand for something implied, as the signifier for the signified. But representation is also representation in the political sense, as the foundation of political legitimacy and responsibility. In other words, war is at once a communicative representation and a political representation.

> The clashing armies are words that form sentences in the dialogue of war. They stand for the polities that send them into battle against each other and, by extension, they stand for entire nations whose flag they carry, much like national football teams. Perhaps here is also the root of the idea of shared responsibility that Ukrainians tend to extend to all Russians (Horbyk 2023b).

All Russians are responsible because the conversation is ultimately between the nations—not with Vladimir Putin or with the individual *chmobik* Volodya, freshly recruited from Vologda. Both Putin and Volodya are just phonemes, syllables uttered on behalf of the Russian society.

So the Ukrainian society responds likewise, in toto. We can thus consider the expansion of the war that happened on 24 February as an expansion toward total war, whereby (ideally) all resources are committed to the purpose of the adversary's defeat. Total war permeates society's every sphere of life. It is also characterized by legitimizing civilian targets and often results in extermination of civilians, which has particularly been carried out by the Russian military in Ukraine.

However, the paradigm of total war is realized in Russia's war on Ukraine with significant limitations. Russia has applied some principles of total war, such as attacking Ukrainian civilians and infrastructure, but at the moment it lacks the full mobilization typical for it. More than that, Russia seems to be uninterested in actual, genuine participation, and to fear any initiative that comes with it. I must agree with Jade McGlynn (2023) who in her recent book *Russia's War* concludes that the Kremlin regime tries to mold any initiative in ritualistic, formulaic expressions that follow a tightly controlled script. Putin is afraid of those who do not support the war as much as those who support it too eagerly; he occasionally metes out punishment on them. Instead, he rewards those who do not care and those who are docile in following the script written by the state. This is perhaps the key difference between the high modern total war as seen in the twentieth century and the current war. To remind

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of the joke posted to X by Garry Kasparov after the beginning of the Hamas-Israel War, "What does mobilization have in common in Russia and Israel? – Long lines for flights to Tel Aviv."

Simultaneously, Ukraine involved its civilians much more than Russia but its attacks on the Russian civilians and civilian infrastructure have been limited and hard to compare with the methodical Russian campaign of terror bombing, systematic torture and executions. There is also a certain restriction regarding the weapons used, reflecting the limits imposed on Ukraine by its Western partners and providers of its most powerful weapons. Here, again, total war looks like a stretch.

It is also probable that the character of the war changed as it went by, and quickly. Russia may have started the invasion as just a new iteration of its limited war, ongoing since 2014, yet with a grand aim such as regime change or occupation. It may have hoped, in other words, to attain a total aim through limited means. Faced with failure, this required an expansion towards total war. At least, one can observe total war asymmetrically employed by the belligerents. At most, one could herald a new subtype of war. This would be not simply some "middle kind of war" but a specific transitional phase that, ushered in as limited war, expands towards total war but is severely restrained by the realities of a world that falsely believed it had been past major wars.

This is a world of extremely skeletal, scaled-down militaries, a world where rusty tanks won't start, and old shells produced during the previous world war explode in the gun's barrel. Ukraine has to a significant extent squandered its powerful Soviet-era military industry, and what remained of it – disproportionately located in the Eastern parts of the country – was further devastated in the ongoing invasion. Western arsenals, and especially the rates of production, do not nearly match the scale of the hostilities. Russia also fell victim to both its fascination with hybrid and limited wars – this too is the influence of the unwarlike milieu in Europe – as well as corruption and simply bad preservation of its equipment. Ukraine is further constrained by its allies, and Russia by its internal politics. So the reality holds back the belligerents, hampering their efforts in all possible ways and keeping them in a limbo of a still somewhat limited conflict, although the vector towards which they gravitate points out to total war.

For lack of a better word, it can be called *a totalizing war* and seen as a transitional warfare form between limited and total war, when "total aims are still constrained by the belligerents' limited military capacity" (Boyko/Horbyk 2023: 38). It is a war that you fight when you want to fight a total war but you can't. It is a total war in a world that has forgotten how to fight it. Moreover, this is also an asymmetrically totalizing war since the means through which the striving towards the totality is brought about are asymmetrical. Despite its incompleteness, it tends toward totality and will develop in that direction if given a chance (which it still is, at the time of writing). It is really a transitional form.

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Indeed, this reminds of another Clausewitz's axiom of war, where "the world of reality takes over from the world of abstract thought <…> and, if for no other reason, the interaction of the two sides tends to fall short of maximum effort. Their full resources will therefore not be mobilized immediately" (Clausewitz 2007: 18). In other words, "man and his affairs <…> are always something short of perfect and will never quite achieve the absolute best" (Ibid.: 17), which explains why war is for the most part always inconsistent and "quite different from what it should be according to theory – turns into something incoherent and incomplete" (Ibid.: 224).

The Húrin Effect and the Augmented Horizons in War of Accretion

What are the main lessons of the Russo-Ukrainian War for the field of digital war, in terms of its two core problems, participation and technology? It is primarily those of a reality check, the shattering of dogmas, and hints towards the future lurking behind the corner. It is obvious, after all, that a global confrontation is becoming more likely by the day, and, whether Ukraine will continue to be part of it or not, it already holds up an image of the war of tomorrow. It may belong to the genre of a war preceding a global clash (the Italo-Turkish War, the Balkan Wars, the Second Italo-Abyssinian War, the Sino-Japanese War…) that never present a carbon copy of their bigger successor but contain the seeds of what is to come, even though buried between those very incoherence and inconsistency.

Perhaps the main theme in the discussion of participative warfare is the vanishing difference between the military and civilians. It is not a new idea. Perhaps the first one to be credited with its minting should be Marshall McLuhan, who proclaimed in 1970 that "World War 3 is a guerrilla information war with no division between military and civilian participation" (McLuhan 1968: 66). From this perspective, we are already in that World War 3 and have been there for over half a century. It can be found in Merrin as the idea of "where everyone can experience and take part in the conflict" (Merrin 2019: 196). More recently, Matthew Ford and Andrew Hoskins suggested that people "participate in war wherever they can get a wi-fi or network signal, irrespective of their immediate proximity to the fighting" (Ford/Hoskins 2022: 197), which is flattening "civilian and military experiences into one register". They emphasize:

> War in the twenty-first century is participative. It is war without bystanders. By this, we mean the process of networking individuals and their digital devices has made them both part of and subject to warfare. <…> But this very act of participation collapses the boundary between those who observe war and those who engage in it, lulling actors into a false sense of being active, of making a difference,

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> creating shaky expectations that information translates into both knowledge and action (Ibid.: 47).

This is a very productive thought, particularly regarding the pitfalls of the "false sense of being active" offered by participative warfare. However, the boundary collapse must be examined more closely. If the boundary has truly collapsed, then there is no difference between the combatant and non-combatant. That would imply that non-combatants are just as active, and there is nothing false about their sense of being active. However, in that case, there is really no distinction between a person commenting from their sofa and a person who just lost a leg to a frontline mine. Or shall we indeed talk about different kinds of participation, such as "plain" sofa participant and participant+ in the mud of the trenches? "Combatant participants" and "noncombatant participants"?

If, on the contrary, the "noncombatant participants" sense of being active is false, then the boundary between genuinely active soldiers and falsely active civilians remains; in that case, the collapse of boundaries is illusionary. This contradiction can be resolved by specifying the collapse exists only in the digital civilian's naïve perception, or by suggesting there are grades of participation. The Ukrainian experience tells us that participating civilians can still make a difference (cf. Boichak/Jackson 2019; Olga Boichak's and Kateryna Boyko's chapters in this volume). Perhaps, instead of total collapse, we may choose to talk about the layered structure of participation, ranging from something as minute as liking a post to something as grand as giving your life for your country. In that case, we would actually find more relevance in Clausewitz speaking of absolute war as "the business of the people", with an updated version of the triad still relevant.

A "smartphone warrior" in a "keyboard war" could indeed be a bright, recognizable image that is true to an extent. However, the Russo-Ukrainian War should probably teach us that speaking of a collapse of all boundaries and distinctions is premature. If there is absolutely no distinction between soldiers and civilians, which most authors in the field are adamant about, and we are all participants, then there should be no distinction between hand-to-hand melee in mud trenches outside Bakhmut and sharing a fundraiser from the comfort of the sofa and the nuclear umbrella in a Western metropolis. There should be no difference between being banned on Facebook for writing the truth about the war and becoming disabled on the frontline. If there is no difference, then Russians might be right when they indiscriminately attack civilians – after all, civilians are participants![1]

The consequences of such conceptualization would be absurd and unethical. Indeed, there is a blurring of boundaries and the acceleration of the *quīris – mīles* cycle.

1 This question is actually raised: "When everyone participates, how do you distinguish between civilian and combatant?" (Ford/Hoskins 2022: 49).

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The boundaries of war are fuzzy and the doors of the temple of Janus almost never close, just like in Roman times. Is this really so radically new, or just a return of certain archaic features on the shoulders of futurism? After all, the urge to separate war and peace is a characteristically modern and relatively recent reaction to what was always not so easy and clear-cut. The apparent rise of the civilian toll in current wars may hint at the erosion of distinction from the perspective of belligerents. Participants with guns obviously would be tempted to liquidate participants without guns. Yet shall we join this in smashing the conceptual bulkheads and opening the floodgates of both common sense and human law? The task of theorists is also to maintain the conceptual boundaries and be attentive to the nuances of difference rather than go with the flow in a sweeping generalization. Moreover, what matters more than the softer boundaries is the reaction of our participants to them, which is obviously to assert and redefine at least some boundaries. The current crisis of unity in Ukrainian society is yet another testimony to the theoretical dead end: to Ukrainians today, the idea that a civilian with a smartphone is no different to a soldier is not just blasphemous, it is wrong. And for those under the genocidal Russian occupation, being a "smartphone warrior" ends when faced with a smartphone check by "warriors" armed with actual guns, as it happens under the ethnic cleansing regime of the Russia-occupied territories of Ukraine.

War participation is indeed extended today, but there is also a hierarchy of participation. I would really prefer to talk about grades of participation or levels of involvement. To be sure, there are still non-participants (think of a person in New Zealand who does not follow the news and is not present much on social media). There are participants who are involved inadvertently, being exposed to strategic communication campaigns in the context of their domestic politics (a MAGA hardliner whose main concern is "enough money for corrupt Ukraine"). There are participants who get involved through donations, social media infowars and activism (think NAFO). There are global influencers and media professionals, just like those British journalists involved in "nativization" of Ukrainian war-related concepts and loan words as revealed in Nadiya Ivanenko's chapter in this book. Ukrainians abroad, who run a very slim risk of being harmed (they may still be attacked by Z-radicals from Russian diasporas): some of them are very involved, others not so much. There are Ukrainians within the country who also participate in the war economic cycle. There are volunteers, whose work is based on influencer marketing, social media presence and content creation. There are also those professionally in charge of strategic communication, as described by Oksana Domina's contribution to our volume. And there are soldiers who actually participate in a kinetic war and also face the greatest risks. "Everywhere war" it surely is, but not necessarily the same war everywhere!

All of these people are participants in different ways (except for the social media refugee from New Zealand, perhaps). But these are all different kinds of partic-

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ipation, with different stakes and risks, different intensities, different impacts and consequences. Being all involved, we are all particles, but we have different spins and flavors. Kinetic war is still not simply present but central and definitive to questions of territorial control, bio- and necropolitics. Continuing with physics metaphors, one could imagine it as the central core which expands not though literally sucking everyone right into the core but by pulling ever more "particles" in its power field and setting them in one of the ranged horizons, from inadvertent participant to social media warrior lite to activist to combatant. Depending on a variety of factors, the particles may ever stay on their horizons, make progressions towards or regressions away from the core vortex, or eventually be pulled into that radiating nucleus.

More remote horizons may also be seen and used as part of sales vortex in military recruitment infused with modern marketing techniques. This is surely how it worked in Ukraine in the first year of the full-scale invasion when the volunteers still abounded. Simply participating in social media discussions was an inexpensive entry-level participation that gradually would lead through several steps to greater engagement: donations, then volunteering and developing ties with specific units, later becoming a soldier and finally progressing through the vortex to the war participation's final horizon: actual participation in combat.

Furthermore, the ideas of "no distinction between military and civilian participation" and "collapse of boundaries" suggest that participants, once entering the power field of digital war, remain that; in a way, we are all trapped in war. It seems to me that a more appropriate way to speak about participation when it does not entail a 24/7 focus on war, is to invoke the ease of transition between a participant and non-participant, the accelerating cycle of flipping between the poles of *quīris – mīles*.

Moreover, the longer the war lasts as a large-scale, conventional interstate war, rather than a limited or hybrid conflict, the more resources will be subject to attrition, which also concerns participative resources. This has huge implications for understanding the future of interstate warfare and potential global conflict. The resulting *participative attrition* may be defined as "the gradual erosion of participation due to the war-induced degradation of infrastructural, algorithmic, democratic, material and mental conditions for it" (Horbyk 2025). In Ukraine, it is manifested in the destruction of communication infrastructure, the algorithmic deplatforming and banning of Ukrainians on global social media platforms, the encroaching military logic takeover over media/social media logic, the dwindling amounts of donations, and mental as well as physical exhaustion of participative activists.

Furthermore, significant numbers of Ukrainians have been killed, and many have fled abroad, which became a breeding ground for divisions. Surely, displaced Ukrainians can participate and do participate, most often, from a distance. They donate, organize, spread awareness, arrange and attend rallies (cf. Olga Boichak's contribution to the volume). Yet the range of participation repertoire is very broad,

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as demonstrated above, and this contribution does not appear to be sufficient for those who are already on the next horizon. Displaced Ukrainians are often called out for their alleged cowardice and lack of patriotism by those in Ukraine – on the frontline or not. Spatial differences do matter even in virtual spaces. Discontinuity of space creates divisions through discontinuity of experience.

At the same time, despite activism and infowars, for many civilian Ukrainians both abroad and in-country, the experience of participative digital war has also proved rather paralyzing. There is a story in J. R. R. Tolkien's oeuvre, already much memeified by digital folklore creators, which seems close to one particular way of experiencing digital war. Húrin was a stalwart warrior against Morgoth, Sauron's much more powerful predecessor as the dark lord. Captured in battle, Húrin was tortured by Morgoth to reveal the location of a secret elven city – to no avail. Morgoth did not punish the audacious warrior by death. Instead, he fashioned for him a throne atop a high mountain and seated him there to watch how his children, whom the evil lord had cursed, suffered immense and innumerable misfortunes. There sat Húrin for years, a powerless observer, a watcher, in magic paralysis, until his family perished in pain and infamy, bringing the curse to a close.

For most, the modern way to experience war, safely separated from us by the reinforced glass of the screen like a caged beast in a modern zoo, is through social media feeds, and there is something in it that unmistakably reminds of Morgoth's curse. Are we – civilian noncombatant participants/*quīritēs* – not all a little like Húrin, perched atop our comfortable thrones, on the high summits of our urban lofts, glued to the spectacle of suffering we cannot really do that much about, which we have been cursed with and tortured with – unbearable to watch, impossible to stop watching? Glued to our screens, like little children to that safety glass in a zoo, watching in awe and pleasure how lions gnaw and tear apart bloody carcasses.

More powerless viewing than anything else, it represents a particular mode of watching equally distant from the politics of surveillance or sousveillance; perhaps "juxtaveillance" as watching side by side without participation could convey the sense of isolation and fragmentation inherent to it: a tortured stare rather than empowered gaze. It is in this "Húrin effect" that the "false sense of being active", aptly captured by Ford and Hoskins, comes to the fore, as "connected technologies like the smartphone help to create asynchronous experiences of war and violence" (Ford/Hoskins 2022: 15). This is one of the conceptual challenges with participative war: participation does not automatically entail agency. While it is built on the premise of users who are active and involved, the nature of this involvement in the current media ecology is such that it gradually wears down and erodes participation. Here, the actor-network theory distinction between actor (someone or something that makes a difference and may be a human individual or a non-human object) and agent (acting out of one's own will and necessarily human) is very productive. It is hard not to remember Jacques Ellul's suggestion that people incessantly bombarded

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by opposite messages develop indifference to them, numbness even (Ellul 1973: 191; 281). This numbness is painfully obvious to an observer of the digital battlefield around Ukraine, and even inside Ukraine, despite all the wonders of resilience. Here also belongs the West's "Ukraine fatigue", the moral numbness of so many Russian influencers despite others clinching with the official narrative (as captured by Nuppu Pelevina's chapter in this book) in a sort of stalemate – perhaps already a success? On the one hand, its vector is towards involving more and more individuals beyond soldiers; on the other hand, involvement entails the passive role of unwitting means-to-an-end as much as active agency (the balance between the two is shifting). The explosion of participation leads to the implosion of participation. The consumer of war is consumed by war. To participate in a war is less to take part than to be just a part in its mechanism. To be enacted rather than act. Participative war enlarges the war-involved mass but does not make it active. Most of all, it turns agents into actors, and humans into objects.

In this context, it is not too far-fetched to opine that even the very concept of participative war may be misleading (hence the interest in alternatives, from digital to radical war, that, however, still struggle to capture this particular contradiction). Perhaps, other modifiers could signify the sense of extension without empowerment: expanded war, prolific war, consumptive war? All of them could capture different aspects of this orbit effect around the radiating nucleus of war or, on the contrary, vortex accreting ever new particles in ways that grant and at the same time limit their participation. Perhaps *war of accretion* might be a viable choice, with a touch of pun on "war of attrition". For lack of a less ambiguous concept, *augmented war* can be used to capture more sharply that ambivalence around digital war's participative potential and its different horizons.

Beyond Technodeterministic Dreams, Towards Technology as Redemption

If war is the father of all things, as the ancient saying goes, then digital war is the father of all digital things. Indeed, war has always been among the key drivers of technological innovation, and technology always repays its due to war. Looking at the scope of tech involved in today's media ecology, from radio (wi-fi) to computing, from touchscreens to the very architecture of the internet, we will see that most of them were developed for military needs. So when smartphones are used in war, this is not simply a conversion of a civilian tool to military use. It is a reverse conversion of an assemblage of military technologies that were put to civilian use but are now returning to their original purpose. When used in war, the smartphone comes home; war is its cradle.

The Ukrainian experience has sealed the importance of portable devices and communication infrastructures in contemporary warfare. Here, Ukraine presented

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a much different case to other contemporary conflicts with a significant digital component, such as wars in Afghanistan, Syria, Libya, Tigray or Yemen. Located in the European periphery, it boasted a much more developed and robust infrastructure. For example, according to ITU estimates, 79 percent of Ukrainians were using the internet in 2021, while in Syria this number was only 36 percent in 2020. 92 percent of the Ukrainian population was covered by at least 4G connection, while in Syria it stood at 42 percent.[2] In September 2019, Ukraine was placed at #4 out of 39 European countries in terms of the penetration of FTTH/B-nodes (Fiber to the Building) and FTTH (Fiber to The Home), with 11.24 million nodes—only Spain, France and Russia had more (FTTH Council Europe – Panorama 2020: 9). Ukraine boasted a high-quality and very cheap internet connection, with average speeds of 29.06 Mbit/sec in 2021 and ranking top five in several different rankings of world's cheapest broadband at rates of ca. 5–7 EUR per month. It is also notable that Russia ranked high on these indicators, too, the key difference being that Ukraine was more even in the distribution of its infrastructures while Russia may be characterized by a drastic contrast between hyperdense areas around its megapolises interspersed by vast voids of underdeveloped countryside and wilderness.

Such high density of the ICT infrastructures in Ukraine implied even higher intensity of mediation, capacity of communication channels, and technological literacy among the population (both civilians and the military). As a result, it would be safe to assume the Russo-Ukrainian War is currently the most recorded, mediated and mediatized war in history. It also meant that the existing infrastructures and skillsets were available for those interested in exploiting them for military purposes. Digital affordances foster participation but are also increasingly harnessed for top-down elite narratives that build hegemony and domination, for example, in the context of Russian Orthodoxy (see chapters by Jacob Lassin, Bojidar Kolov and Nadia Zasanska in the present volume).

The weaponization of technology in the spirit of experimentation and invention has been ongoing since the very beginning of the conflict and closely knit with politics and economy. When confronted with the lack of access to human spotters on par with the Russian paramilitaries, Ukrainian soldiers, many freshly recruited or volunteering from the IT sector, pioneered the use of drones for reconnaissance and targeting already in 2014. After 2022, this rapidly intensified, leading to the widespread use of drone warfare, including FPVs and most recently fiber-steered drones, invulnerable to jamming. The dearth of equipment pushed Ukrainians to invent a myriad of other makeshift workarounds and contraptions, the "*gambiarras* of the frontline" (Horbyk 2022). Of course, this also motivated Russians to attack the communication infrastructures to create data-transfer-limiting "bottlenecks" (Ford/Hoskins 2022: 74) and blackouts. Big Tech also became an actor in this process

2 See comparative data: https://datahub.itu.int/data/?e=UKR&c=SYR

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with a controversial role; suffice to mention the case of Starlink satellite internet by Elon Musk's SpaceX or through generative AI from Google or Microsoft blending in the information warfare, which Makhortykh et al. analyze in their contribution to this book. And yet the net result here seems to be rather positive for Ukraine.

Notably, this intense innovation was spearheaded by small and medium IT enterprises, winning governmental commissions in spite of red-tape and corruption or simply donating tech to the AFU units. Indeed, the involvement of the IT sector was an important factor in the opening up of the Ukrainian military to commercial and private actors. Here, the discussion of technology enters the dire straights between Scylla and Charybdis. On the one hand, Ukraine's public diplomacy and strategic communication frequently focused on its "crowdfunded army", teeming with innovation and private initiative, in contrast to Russia's tank rust and rigid Soviet-style hierarchies. On the other hand, many scholars urge to "avoid the orientalist mistake and claim that open societies are somehow better at innovation than authoritarian states" (Ford/Hoskins 2022: 181). But does it mean that Ukraine and Russia innovate in the same way? Reality check moderates both propositions.

One of the key areas for digital tech today is command and control (2C) systems. According to open-source data, the Armed Forces of Ukraine have used 12 (!) different digital 2C systems, some mutually compatible and some not. This sparks reasonable fears of chaotic fragmentation, even though it also makes the AFU more decentralized and creates a potential for flexibility. For an individual soldier, the choice is comparable to the variety of dating apps or step trackers and creates an opportunity to choose the best-tailored option. However, what matters to us is that nine of these systems were developed as private initiatives of IT companies and even private individuals with IT expertise. Only three of these were the result of centralized MoD commissions (see: Melnyk 2022).

At the same time, Russia uses one centralized 2C system "Akatsiya-M", ordered in 2018 and bringing together several other lower-level networks (such as "Andromeda-D", "Barnaul-T" and "Reostat", specialized for different army branches; see Kevlyuk 2021). It was developed by the concern Sistemprom, which is part of the larger holding Roselektronika. Other systems are developed by concern Sozvezdiye—it is also included in the Roselektronika network. Roselektronika, in its turn, is 100 percent owned by State Corporation "Rostec". What we deal with is a sprawling, complex yet hierarchical system owned by the government. Eventually, all of the tech innovations, appliances, and systems are created within the state apparatus, only somewhat split in sectoral enterprises for greater flexibility. Can it be really equaled with Ukraine's bottom-up innovation process, working off the individual initiative?

This, obviously, does not mean that Russians do not innovate. In fact, the Russo-Ukrainian War is a battle of ingenuities and dexterities in *téchne*. The Russian Army has many innovative products, especially in electronic warfare, such as the notorious Leer 3. A typical pattern is also that as Ukrainians innovate on the go, creating a

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makeshift contraption as a quick fix for the need or gap, it is quickly taken over and perfected by the Russians. As in any war, belligerents learn from each other and may become better at each other's game. Where Russia is particularly good is scaling up innovation to mass production – this is also where Ukraine struggles.

For example, while Ukrainian volunteers with IT experience and hobby drone pilots began experimenting with drones in 2014, perfecting this tactic all the way until the present, Russians quickly started doing the same and in 2022 delivered a painful hit with some of the most effective drones of this war, Orlan and Lancet. The manufacturer of Orlan is LLC "Specialnyi Tekhnologicheskiy Tsentr" in St Petersburg, which appears to be privately owned but is a large company with 4,500 employees and well-integrated in the government system of commissions. Lancet is produced by ZALA, a company owned by the state Kalashnikov concern by half with the other half belonging to the founder and constructor Aleksandr Zakharov (also affiliated with the state-owned Izhevsk military factory). It is hardly surprising that their drones have been used by Gazprom to monitor its network of pipelines. If one keeps in mind that the Russian intercom cables, including those used by Russian television, follow those pipelines, a perfect picture of a military-media-entertainment-energy-industrial complex emerges (cf. Der Derian 2001). Add to that the affordances of social media and the political economy of the new pro-Russian populism, as captured in the chapter by Ziock et al. in this book, and you will obtain a rather comprehensive picture of Russian influence in Europe.

Thus, while innovation belongs to all, Ukraine and Russia do it differently and with different sets of strengths and weaknesses. As technological innovation redefined the boundaries of warfare, drones emerged as the most discussed new trend of the Russo-Ukrainian War. Whereas larger, tactical and operational level UAVs have been successfully used for a long time, the most recent Ukrainian experience catapulted small and agile drones (Class 1 in the NATO classification) to the limelight of international military fashion. Recon, bombing and FPV drones, particularly those with fiber cable controls and computer vision that Migle Bareikyte and Mykola Makhortykh analyze in their chapter in the present volume, as well as seaborne USVs of the "Sea Baby" type that effectively ended the Russian navy dominance in the Black Sea, sparked numerous debates on the drone as a new Wunderwaffe, allegedly making whole military branches obsolete.

In some ways, the drone, indeed, presents the ultimate version of what Paul Virilio (1989) called "the armed eye" in a war he saw as a game of hide-and-seek and ever-accelerating speed required by the military. Livestreams that provide data feeds to real-time observers armed with explosive projectiles: can there be a fuller realization of this principle? UAVs have undoubtedly a bright future, especially when their use by quickly learning autocracies will relax some legal tension around their use in the West. At the same time, it is precisely the technodeterministic "Wunderwaffe" hype that must awaken our skepticism. The civilian drone converted to military use was

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not simply an insight of military engineering genius; it was a quick fix to allay the exigence here-and-now and fill in the gaps and deficiencies in the structure of combat assets available to the AFU. And while it often proved a savior, there are also worrying reports of the frontline now mostly held thanks to drone operator teams, slowly receding under the pressure of waves of Russian infantry attacks. It would be a grave mistake once again to relegate the defense and security of Europe to a handful of very expensive, very precise and hard-to-replenish systems while neglecting the issue of manpower, so painfully biting Ukraine today. Despite the ridicule of banzai charges, the image of future war is light infantry equipped with expendable mobility resources, enhanced by electronic assets, comprehensive drone coverage and long-range fires, especially missiles.

One more vital implication of the Russo-Ukrainian War in its full-scale phase is that it moderates the ephemeral virtuality of digital war as imagined in scholarship. While demonstrating the role of technology, it also reminds us to remain grounded, remembering the decisive factors of scale and physical control over the territory. Modern war is no longer a hybrid theatre of ambiguity and non-state actors. It is not so much about disinformation, supplemented by cyber attacks and civil unrest. Rather, it is a marriage of full-spectrum augmented digital warfare with infantry-focused combat, often descending into trench warfare that is visceral, ferocious and almost archaic, as graphically described by Ernst Jünger. In fact, it may be seen as a combo of Jünger with McLuhan:

> Whether the claws are spread and the teeth bared at the moment of the encounter, whether raw-edged axes are swung, wooden bows are drawn, or whether very fine technique elevates destruction to the highest art, the point always comes where the white in the eye of the enemy flames with the intoxication of red blood (Jünger s.a.: 8).

It is the "fine technique" that has gone digital, but infantry warfare is just as decisive in all its corporeality. The current stalemate results from the lack of balance between these two aspects. While Russia has a stronger mobilization resource, it struggles to coordinate innovation in a more efficient way and develop truly revolutionizing tech. One of Ukraine's greatest problems proved to be the Russian superiority in manpower, coupled with the attrition of the AFU's best units and endemic problems of poor management and Soviet-style doctrine, with which Ukraine hemmed itself in a situation of asymmetric disadvantage where it has to rely on technological and innovation superiority to forestall the Russian meatgrinder encroachment. Whoever will be the first to square the problem of technology versus deploying infantry advantage may be in a position to achieve a complete victory.

Jünger was ingenious in grasping the evolutions he had to witness, noting the transition from pitched-battles warfare to the war of materiel in 1914, then giving

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way to mechanized warfare by 1917 (Jünger 1920/2017: 69). Later, he developed a vision of how "following the wars of knights, kings, and citizens, we now have wars of workers" (Jünger 1930/1993: 125–126); he later fully fleshed this theory of industrial warfare in "The Worker". Now, if we dare try his shoes and risk developing this vision further, we will have to face that we are witnessing a likewise rapid shift from the "war of workers" to something that can only be described as a war of users. Users, tapping their smart screens and tampering with their smart devices. The war of user is perhaps the most apt alternative to the conceptual perils of "participative war".

Technology tells us the truth about the world because it stems from creation and creativity, the Greek *poiesis*, as Martin Heidegger suggested in his seminal "Question Concerning Technology". But modern science-driven technology, according to him, replaced that original "bringing-forth" with "challenging-forth": everything is seen as just a resource, and even humans are placed "in standing reserve". In our war situation, this comes across as militarized exploitative thinking that demotes humans to the status of objects, as a mere resource to burn through and expend. What better way to capture the spirit in Ukraine as it is caught up between manpower shortage and forced "bus mobilization" in 2025? It is even more relevant to the similar demotion of participants to actors-not-agents that the augmented war carries out through the enframing of modern communication architectures.

Heidegger proposed to reclaim *poiesis* in technology through art. Ukrainian artists have taken an active stance in the war, using the affordances of social media and their craft to unleash the potential of artivism to raise awareness or even document war crimes, as Alina Mozolevska's, Orest Semotiuk's and Elena Korowin's contributions to our book show. The Academy Award-nominated documentary *Porcelain War* (2024, dir. by Brendan Bellomo and Slava Leontyev) portrays artists at the forefront of Ukraine's defense, considering military service an extension of their mission in defense of humanity, beauty and love that all need to be protected with arms. Technology is now seen in Ukraine as a way to save the lives of Ukraine's defenders, its best children who volunteered and were called to fight from their fields, offices and art workshops, just like *Porcelain War*'s protagonists. Ukrainians contrast high-tech with the "meat waves" tactic that treats manpower as expendable. When technology becomes lifesaving, when it helps construct human life as a higher value, rescuing it from the standing reserve, it also reclaims itself from enframing. It acquires a new social meaning beyond working through the resource, as something that increases the value of human life rather than devalues it. Even Heidegger did not foresee that such an opportunity would be offered by war!

This is also the point of intersection for two doxas of digital war: the technocentric and human-centric. The former may be well nuanced, as in ANT, or oversimplified, like those technodeterministic dreams mentioned above. There are also numerous overlaps and connections between the two. But in their focus mainly on one side of the coin, each one produces a rather flat image. Perhaps what we need is

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a kind of a middle ground, or better still a 3D view of both sides of the coin. To borrow a motto from Markus Krajewski's words, "the goal is to look behind the scenes with the support of a historically informed perspective, in order to determine how the structures operate beyond the threshold of the visible" (Krajewski 2018: 304).

The Aims and Contents of the Present Volume

The book you are holding in your hands found its origin in the pioneering workshop "Digital Wars: Media and Technologies during the War in Ukraine" held on 12–13 October 2023 at the Interdisciplinary Center for European Studies (ICES) at Europa-Universität Flensburg and organized with profound thought and great enthusiasm by Prof. Dr. Hedwig Wagner, Prof. Dr. Tobias Nanz, and Dr. Nadia Zasanska. This event became one of the very first attempts, if not the first one outright, to explore systematically and in-depth the role of digital media and technologies in the Russo-Ukrainian War in an academic setting. Addressing a number of topics from the influence of technological advancements on battlefield outcomes to digital and social media in conflict, from war documentation to strategic communication, the free discussions on connectivity, participation, technological innovation and virality became truly inspirational for all its participants. While not every chapter in the current volume was presented at that time, most of the contributions were indeed prepared as first drafts for this event that may be seen as seminal for the study of digital war in the Ukrainian context.

And it arrived very timely. In an earlier publication (Horbyk 2023a), I lamented what at that time felt like a silence between the burgeoning study of war's mediatization on one hand, and the more established bastions of war and military studies on the other. More than anything, it was also a challenge for our emerging field of digital war. I urged – perhaps a bit stridently – for a richer, more interconnected conversation, one where the insights of mediatization scholars and those from war studies would actively transform each other. A major step in that direction had already been taken with Matthew Ford and Andre Hoskins' important book, and how reassuring it is now to find this very volume responding to that call for conversation too. Just a couple of years later, here it is: a testament to what happens when ideas spark and connect across disciplinary boundaries. Digital war is indeed a field that operates at speed.

The volume brings together many of the brightest names in Ukrainian media studies today as well as cutting-edge research on innovative communication practices emerging from the Russo-Ukrainian War. It consists of four major parts, each focusing on an area where media and technology are driving forces in the transformation of war. The first part broadly approaches problems around society, communication and activism, notable for social theory. The opening chapter by

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Olga Boichak examines how Ukrainian diaspora communities mobilize for remote "homeland humanitarianism" during the Russian-Ukrainian War, focusing on platform-mediated efforts in Canada, the United States, Poland, and Israel. It identifies three key dimensions of their involvement: discussing homeland politics, discussing the war in the geopolitical and international context, and providing direct battlefront relief. This study also provides methodological inspiration, demonstrating the potential of the synchronization of computational and qualitative approaches, and highlights the growing centrality of dispersed humanitarian actors in global geopolitics, facilitated by social media's reconfiguration of activism and aid. In the next chapter, Oksana Domina focuses on the evolution of strategic wartime communication in the context of media change and the ever-growing mediatization of war and departing from the media richness theory. The author's attention is focused on how, in the decades between the Soviet-Finnish War and the Russo-Ukrainian War, the preferred media shifted from low-richness media, such a printed materials, towards high-richness ones, including livestreams and social media. The following Chapter 3 presents Nadiya Ivanenko's quantitative and qualitative analysis of the language innovation in English as used in the British press. It is particularly interested in how new concepts and words are minted or directly borrowed from Ukrainian, once again demonstrating the extraordinary openness of English to loanwords as well as highlighting the new interesting dynamic subverting the usual direction of lexical borrowing, namely, from English to Ukrainian. In this way, the very language as shaped by media becomes a tool for shaping the perceptions of war. When read together, the chapters of the first part point out to border-transcending disruptions and connections initiated by the war with global implications, contradictory power dynamic and significant legal and ethical challenges.

The volume's second part zooms in on war reality and disinformation. Chapter 4 by Migle Bareikyte and Mykola Makhortykh delves into the uses of AI in digital war from a fresh angle: interaction between different AI systems and representations of war by one AI system to another. This departs markedly from the usual focus on human-machine interaction in previous research. Analyzing such cases as the application of facial recognition tools, deepfakes, and computer vision techniques, the authors make an important new step in this highly relevant area. The next chapter by a collective of authors also led by Mykola Makhortykh and including Maryna Sydorova, Ani Baghumyan, Victoria Vziatysheva, and Elizaveta Kuznetsova, addresses a particular problem in the war-related use of generative AI, namely the role of large language models (LLMs) in information warfare. Their audit of several platforms from Google, Microsoft, and Perplexity indicates notable and worrying differences: while some chatbots (Perplexity) demonstrate improvement in performance over time in several languages, others, like Gemini, pair improvement in English with deterioration in low-resource languages. In Chapter 6, Fiete Stegers,

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Jonas Ziock and Christian Stöcker deal with how the familiar Russian disinformation narrative on biolabs spread in German social media. The authors make a useful connection to the bioweapons theme in Soviet propaganda from the Cold War and demonstrate how the old story can be adapted to the digital war ecology. While rejected by the mainstream media gatekeepers, the narrative of non-existent "CIA biolabs" in Ukraine was picked up by conspiracy theorists and anti-establishment pro-Russian politicians in Germany, demonstrating how digital war opens a fragmented media landscape to information warfare. Nuppu Pelevina addresses the problem of the tug-of-war between regime propaganda and oppositional activism among Russian celebrities on Instagram. Analyzing their reaction to the full-scale invasion of Ukraine, the chapter demonstrates how the anti-Kremlin social media activism blunted the combative edge of the pro-Kremlin propaganda amid simplified, influencer-style takes on the war. Thus, the book's second part registers the contradictory transformations of both information and kinetic warfare induced by technological interventions and highlights the function of digital spaces as a new battlefield.

The third part concentrates on memory, community and resilience. It opens with Chapter 8 by Kateryna Boyko, focusing on weaponized online piracy as a new domain of digital war in the grey zone of semi-legality. As the author's case study reveals, online piracy was mobilized in Ukraine, Russia and Belarus in different ways. While Ukrainian torrent tracker communities, who had already had a strong sense of identity thanks to their culture of participation and activism, self-organized in defense of the state that had persecuted them, in Russia and Belarus piracy became a de-facto official policy with a purpose to hit Western producers with legalized content theft. Alina Mozolevska's chapter 9 explores the role of Instagram in the artistic documentation of war crimes, with the case of the Okhmatdyt hospital attack in Kyiv at the center of the study. The strategies, tactics and techniques adopted by the Ukrainian creators harnessed the potential of visual art in the age of mediatization and social media to become a tool for accountability, justice and historical truth. Chapter 10 by Orest Semotiuk dives deep into humor as Ukraine's wartime resource, applying multimodal analysis to a sample of memes devoted to General Valeriy Zaluzhnyi. Metaphors and intertextuality combine to highlight Zaluzhnyi's strategic skills in what the author innovatively proposes to analyze as "imagefare". The third part concludes with Elena Korowin's chapter on cats in Ukraine's strategic humor, highlighting their function as avatars in achieving virality in the wartime context. The sympathy, familiarity and relatability of cats' images are instrumentalized both consciously and unconsciously to attain strategic aims, such as fundraisers or raising awareness under the conditions of attention economy. The chapters in this part of the book bring to the fore different communities and their inner practices of mediated participation mobilized for agency in the wartime state of exception.

The fourth part brings the volume to a close with the focus on religion, media and war. In chapter 12, Jacob Lassin shows how the Ukrainian Orthodox Church (Moscow

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Patriarchate) applied digital tools of their online media to project a softer and more defensive stance as well as a more independent of Russia image against the background of an increasingly hostile domestic situation. The following chapter by Bojidar Kolov investigates the story of Russia's journey from its (failed) attempt to project soft power in the post-Soviet space to the full application of hard power, using the case of the World Russian People's Council (WRPC). While before 2022, their activity and media production attempted to emphasize Russian hegemony more covertly, the full-scale Russian invasion marked a decisive shift to more aggressive rhetoric centered on the legitimation of the war and Russian military domination. The book's concluding chapter 14 by Nadia Zasanska tackles the uses of Russian Orthodox websites and Telegram channels to endow Russia's war on Ukraine with a sacred, religious meaning. Building on the concept of the 'digital third space' and a qualitative, corpus-based methodology, this study examines how fundamental interpretations of religious imagery transform it into a form of religious warfare. This final part of the book sheds light on how the affordances of the digital are harnessed by powerful strategic state-linked actors to further their interests and power, constructing legitimation devices from the realm of the sacred, the sublime and the archaic.

In conclusion, the current volume reveals in stunning detail the range of dynamics and contradictions in the digital domain of the Russo-Ukrainian War. One major concept that emerges from the dialogue between the chapters is the dialectic (and politics) of connectivity and disconnection. On the one hand, digital war is run in the virtual space, obviously globalized but with many sealed and semi-closed pockets and is enabled by connectivity and drives the need for it as well as for ever richer media. Digital war is a fully interlinked set of global connections. On the other hand, connectivity and the virtual space are constantly tampered with by a range of actors who are interested in creating blackouts, bottlenecks, surveillance gazes, and physical controls to steer the communication flows in the required direction. In this context, physical space is very far from being sidelined by virtual space; on the contrary, it matters more and more.

The next common theme that emerges from this conversation is the function of digital space as a battlefield not simply between belligerents at war but also between agentic participation and strategic elite interventions. While participation does not necessarily mean agency, as I demonstrated above, most of the contributions do focus on specific communities that consciously mobilize themselves for the war effort and strive to make a difference, which in many cases they certainly do. This agency is at odds with the enlistment of digital affordances by powerful state-linked actors that are becoming ever more dexterous and tech-savvy. In most cases, the contributing scholars succeed in separating the two, but it is reasonable to assume that the openness of the digital battlefield results in much confusion with significant strategic consequences.

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From this theme, another perspective may emerge: that on art, craft and even participatory practices as a form of technology, an ingenious contraption used to bring about particular ends. With the crucial role of humor in the Russo-Ukrainian War, perhaps it is also time to consider humor as a form of *téchne*?

Finally, the volume highlights the paradoxes of technological innovation. As several contributions demonstrate, it is deeply enmeshed with war and should be considered a participant (technological actor, in ANT terms) even when it comes from the global Big Tech and is explicitly marketed as "above the fight", unbiased, neutral, non-weaponizable etc. At the same time, beyond this "human interface" of technology, there is a growing architecture of machinic actors/participants that operate without human interference. While we discuss the complications of human participation, the expanding dimension of automated participation has the potential to enwrap much of digital war. What vector will innovation assume when it has ever increasing power over human participation while subjected to ever decreasing human impact?

Whatever shape augmented digital war will take in the future, the Russo-Ukrainian War has become the pinnacle of its current phase. It is difficult to predict how long it will last and what its outcome will be. A credible scenario at the moment suggests that, even if contained soon, the war is likely to resume in the years and decades to come. It is only the most recent iteration in the century-long conflict that unfolded as the Ukrainian and the Russian nations have taken shape. Centered on the Russian Empire and the Soviet Union, the world has forgotten that this region has a similar potential to generate perennial warfare as some of the most notorious global hotspots. As the war drives innovation, we will see many new aspects of digital war emerge from this technologically robust region. Even with the lackluster support from the international community, constrained by self-imposed limitations and twisted solidarities, Ukraine will continue facing both east and west just like the Roman god Janus – and the gates of war in his temple will remain open.

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