

Technology and the Civilianization of Warfare

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The ongoing armed conflict between Russia and Ukraine demonstrates the crucial role of technology in modern warfare. Digital networks, information infrastructure, space technology, and artificial intelligence (AI) offer distinct advantages: connectivity can help protect civilians in peril (such as in the besieged city of Mariupol); AI software can transform data into valuable military intelligence; GPS-guided smart weapons can minimize collateral damage; and high-resolution satellite imagery can expose disinformation, humanitarian crises, and potential war crimes. In general, the wealth of (open-source) intelligence allows an unprecedented transparency that significantly reduces the “fog of war,” a factor that can impair ethical decision-making.

However, the use of new technology in the Russia-Ukraine war also raises challenges. In this essay, I focus on the way it exacerbates a rather familiar challenge: the participation of civilians in warfare. As a phenomenon, the “civilianization of warfare” is hardly new.¹ But in today’s high-technology warfare, the civilian world is drawn in far more easily and profoundly than before.² That raises an important normative question: how do we weigh the moral benefits and risks of technology-enabled civilianization of warfare? I focus on a notable Ukrainian example: the widespread civilian use of smartphones to contribute to military operations. What are the normative dimensions of such civilian participation? In this essay, I will examine the answer to this question using three prominent lenses: international humanitarian law (IHL), conventional just war theory

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(JWT), and revisionist JWT.³ The analysis shows that civilians could lose their legal protections by directly participating in hostilities, which conventional JWT would justify. Revisionism, however, sheds doubt on the moral liability of Ukrainian civilians, while also providing additional tools for evaluating the causal relationship between a particular contribution and threat. Based on an assessment of the wider implications of technology-enabled civilianization of warfare, including the blurring distinction between combatants and civilians, I argue that a high degree of caution is well advised; civilians are best kept away from the battlefield. At a minimum, states ought to exercise restraint in mobilizing civilians and inform them of the implications of their actions.

“SMARTPHONE WARFARE”

Technological advances have allowed Ukrainian citizens to play a significant role in the defense of their country against Russia’s invasion. Anyone with a smartphone can transmit relevant information in real time, such as the locations of Russian troops, military equipment, and other persons or objects of interest.⁴ The large number of mobile devices equipped with cameras, in combination with accurate positioning data transmitted through position, navigation, and timing satellites, like GPS, and connectivity through digital networks (most notably Starlink’s satellite network), have made such reporting possible. Moreover, advances in AI have increased the speed and accuracy of the verification and analysis of information. This includes the ability to fuse large amounts of data from different sources (such as social media posts, human intelligence, acoustic sensor data, satellite imagery, and surveillance footage from unmanned aerial vehicles) to produce valuable military intelligence.

There are a variety of smartphone apps that civilians can use. These range from dedicated air defense apps; to social-messaging apps; to preexisting government-created apps such as Diia, a widely used Ukrainian government portal for documents such as digital IDs and driver’s licenses. After the Russian invasion, this app was upgraded with an E-Enemy feature, enabling civilians to upload location-tagged photos, report enemy positions, and give tips on “suspicious” persons.⁵ Another example is the newly developed air defense app ePPO, which makes use of GPS and a smartphone’s internal compass, and can be used in tandem with Diia to report incoming Russian drones and missiles.⁶ The information is passed on to air defense units, analyzed, and combined with radar information

and other data using AI to estimate the target and route.⁷ The ePPO app has significant military value, and is said to be successful in defensive operations against Russian attacks.⁸ In October 2022, civilian use of this app reportedly led to an incoming Kalibr cruise missile being shot down.⁹ Ukrainian authorities also launched chatbots to enable citizens to share information on the location of Russian troops, and provided public instructions on how to use them. The *Financial Times* described a civilian who, upon seeing a Russian convoy, “immediately opened ‘STOP Russian War,’ a Telegram chatbot created by the security services, and input the location. He also put a pin in the Google Maps location, screenshotted it, and sent that, plus everything else he knew.” Half an hour later the convoy was attacked by the Ukrainian armed forces.¹⁰

In this way, high-technology warfare exacerbates the civilianization of warfare. While civilian participation is not uncommon, such as in guerrilla warfare, new technologies significantly lower the threshold.¹¹ Having a smartphone makes it easy for civilians to contribute to the war effort, and perhaps even turns them into “fighters” when crowdsourced intelligence is an essential part of the targeting process.¹² Yet this ease comes at a price: it increases the risk that those civilians will be harmed or killed. And indeed, there are reports of Russian troops going door to door hunting for smartphones and laptops, and civilians being killed because Russian tank photos were found on their phone.¹³ Could such targeting of civilians be justified?

A NORMATIVE EVALUATION

Three distinct but related normative frameworks can shed light on the preceding question: IHL, conventional JWT, and revisionist JWT. The principle of distinction is central to IHL. It dictates that parties to an armed conflict must distinguish between combatants and noncombatants, and between military and civilian objects. Combatants, whether or not the military operation is lawful, are permitted to use force against their adversaries within the constraints of IHL.¹⁴ Noncombatants, on the other hand, are protected against direct attack. However, legal protections can be lost when civilians directly participate in hostilities.¹⁵ Following the interpretation of the International Committee of the Red Cross, civilian participation only qualifies as such when it meets three criteria: threshold of harm, direct causation, and belligerent nexus.¹⁶ Do civilians who use the type of apps described above participate directly in the hostilities, in the legal sense? Although the exact legal interpretation of these criteria is far from settled,¹⁷ use of these apps could meet this

standard under certain conditions: when it is likely to adversely affect Russian military capacity or operations, when there is a direct causal link between the voluntary act (independently or as an integral part of a coordinated tactical operation) and the resulting harm, and when it supports one party to the conflict to the detriment of another. It seems plausible that some activities—taking a photo, writing a message, and uploading information in an app—can qualify as direct civilian participation in hostilities when there is a relatively direct causal relationship between providing information and an attack, like in the STOP Russian war chatbot example above. Contributions such as these affect the protected status of civilians and can make it legally permissible to directly target Ukrainian civilians who participate in this way.¹⁸

This interpretation would be justified by conventional JWT. According to Michael Walzer, the “legal equality of combatants” tracks the “moral equality of combatants.” Combatants are instruments of the state, as it were, and they are not responsible for the justness of the war itself.¹⁹ Moreover, they collectively pose a threat “simply by fighting,” which makes them morally liable to attack.²⁰ As such, and in line with IHL, the *jus ad bellum* judgment is irrelevant when considering the rules of *jus in bello*—a distinction known as the “independence thesis.” War can be conducted justly when only those who forfeit their right to life (just and unjust combatants alike) are directly targeted. As noncombatants have done nothing to forfeit their right to life, they ought to be protected against the dangers of war. However, when civilians intentionally engage in “warlike” actions, thereby directly contributing to “the business of war,”²¹ they are no longer “innocent” and become morally liable to attack. For Walzer, the *type* of causal contribution matters.²² According to this “functional view,” providing combatants with military resources qualifies as direct participation, whereas providing them with welfare resources does not.²³ Ukrainian civilians who transmit targeting information using dedicated apps like ePPO are similar to civilians producing weapons: they provide “what soldiers need to fight.”²⁴ As a result, like civilians who lose immunity when working in the war industry, so, too, do users of these apps lose immunity when they are using them. While the legal threshold seems higher than Walzer’s threshold for moral liability to attack,²⁵ both lenses indicate that it can be allowed to directly attack participating civilians, regardless of the justness of the war.²⁶

Revisionist JWT, however, offers a third lens that leads to different answers. The main reason is that revisionism rejects the “independence thesis.” This is because,

in the words of Jeff McMahan, “the principles of *jus ad bellum* apply not only to governments but also to individual soldiers, who in general ought not to fight in wars that are unjust.”²⁷ Taking an approach sometimes called “reductive individualism” as a starting point, revisionism assumes that war is no exceptional moral domain, and therefore *jus in bello* norms should be reduced to the “normal” individual, rights-based morality; that is, the norms regulating interpersonal killing.²⁸ This undermines the moral equality of combatants; only unjust combatants pose an unjust threat and so forfeit their right to life. Russian troops are unjust combatants who fight a war of aggression. And while their moral guilt depends on individual factors such as their intention, level of coercion, and information available to them, it is clear that they are not the moral equals of Ukrainian combatants. This means that, in principle, both Ukrainian combatants *and* civilians are permitted to attack Russian unjust combatants in self-defense. In doing so, they do not forfeit their rights and remain nonliable to attack. As a result, the precise criteria for moral liability are irrelevant: revisionism *allows* Ukrainian civilian participation on the assumption that the civilians are defending themselves against Russian combatants posing an unjust threat.

Where does this leave us? According to IHL and conventional JWT, Ukrainian civilians who use these apps can be legitimate targets. Revisionism, on the other hand, puts the justness of the war itself at the forefront. Although it remains true that by participating in hostilities, these civilians risk losing their legal protections, revisionists would deny that this justifies targeting them. As autonomous individuals in a society under threat, revisionists would argue, they are entitled to take part in the defense against unjust aggression without thereby losing their immunity as civilians.²⁹ They do nothing to forfeit their right to life. Particularly in this context, the moral commitment felt by Ukrainians to defend their sovereign state and its population is quite understandable.³⁰ Not only are they invaded by an aggressor but also Ukrainian civilians are often indiscriminately targeted by Russian combatants. These revisionist conclusions might therefore be congruent with the moral intuitions of those observing the war.³¹ But perhaps not everyone would share these intuitions. While just and unjust combatants are not exactly each other’s *moral* equals, there are strong moral reasons for applying IHL to them equally, especially in light of limiting the overall suffering in war.³² That is, straightforward norms that address combatants as a collective impose the same minimal standard to warring parties and so contribute to restraint, which is less likely when norms are contingent on individual moral

guilt and the often contested justness of the war. Moreover, when such *jus ad bellum* assessments could convincingly be made, unequal norms would remove the incentive to minimize damage for unjust combatants (as they are acting unjustly even if they abide by IHL) and for just combatants (as they could be inclined to disregard IHL in their fight against “evil”).³³ Furthermore, in light of Russian recruitment strategies and propaganda, it seems that many Russian soldiers really are used as instruments of the state, often misled or coerced, and perhaps not in a position to properly evaluate the justness of what they are fighting for.³⁴

However, if we disconnect *jus in bello* judgments from the justice of war and assume that some attacks on participating civilians can be permitted, the line proves very hard to draw. What type of causal contribution justifies the loss of immunity? While it is true that using these apps can be seen as doing something warlike (although not in the traditional sense of producing munitions), and while it is also true that the causal connection can be temporally and geographically direct, revisionists have suggested that the warlike function of a contribution is not a decisive factor. Cécile Fabre challenges Walzer’s functional view; both the moral relevance of the distinction between military and welfare resources and the assumption that direct participation automatically leads to liability to attack. Most participating civilians, she argues, would not in fact be liable because their contributions are not significant enough.³⁵ Indeed, it seems that most contributions described in this essay are relatively minor in light of the entire chain of events. One report is likely to be a single piece of the puzzle that helps identify a target, and there are multiple other agents and causal factors producing the outcome, including the proximate causes (for instance, the actual attack on a Russian convoy).³⁶ At the same time, even a relatively minor contribution can be a significant causal factor.³⁷ One report from a civilian could, in theory, meet the *sine qua non* test when the targeting would not be possible without it.³⁸

These complexities suggest that causality is a matter of degree. If so, it is perhaps best conceptualized as a sliding scale, where gradations of causal contributions can be differentiated to determine appropriate consequences. Relatively minor contributions would justify the imposition of minor consequences (for instance, confiscation of the smartphone), while only direct and significant contributions to the war effort would justify the extreme consequence of losing immunity.³⁹ The problem with these assessments, however, is that it is nearly impossible to determine the degree to which a single report contributes to the threat. The whole process involves myriad interrelated sequences, and the answer depends

on the specific circumstances, the relative significance of other causal factors, and whether or not the outcome would have occurred without that contribution.⁴⁰ Knowing exactly how direct and significant a contribution is in light of the entire chain of events is very hard, especially for combatants on the battlefield. So, while applying *jus in bello* equally to collectives is arguably the best way to foster restraint, civilians breaking out of the “innocent collective” by participating in hostilities nonetheless present complicated individual assessments; that is, the degree to which someone contributes to a threat, and whether that justifies an attack.⁴¹

WIDER IMPLICATIONS

How do we evaluate the wider implications of this type of civilianization? And should states welcome civilian participation in warfare? Undoubtedly, these contributions can boost military effectiveness. The widespread use of apps aids Ukraine’s defense against Russian aggression, and so can reduce the overall risk to civilians.⁴² For example, civilian use of the ePPO app to report Shahed drones and Kalibr cruise missiles allows them to be intercepted before they hit their target.⁴³ That military advantage and the extent to which it helps prevent loss of life must be weighed against the risk that these contributing civilians are harmed or killed as a result of their participation. In that balance, a more subtle implication must also be taken into account: the increased risk for the entire civilian population. Adversaries can take advantage of the uncertainties discussed above, which can allow them to “flexibly” interpret the rules to their advantage. One can question whether that matters in this particular context, given the seemingly blatant disregard of the rules and the frequent targeting of Ukrainian civilians and civilian infrastructure. Nonetheless, if combatants *do* attempt to attack only legitimate targets, it will be profoundly complicated for them to determine which individual contributions justify the use of force. The ease with which those apps are used by civilians not distinguishing themselves as fighters makes this even harder, and the phenomenon of mobile-mobilized civilians may feed into a perception wherein the entire population poses a threat.⁴⁴

In that way, this type of civilianization blurs the military-civilian distinction and thickens the fog of war. It diminishes civilian protections in Ukraine and, in the long run, could negatively impact IHL compliance worldwide, undermining the principle of distinction.⁴⁵ An overall evaluation needs to balance these implications, including the military advantage of such civilian participation in terms of

overall success of the military operation and specific advantages in combat; for example, would a given Kalibr cruise missile be able to be intercepted even without civilian use of the ePPO app? While I cannot determine the relative value of these advantages here, it seems that the gravity of the risks will often outweigh the benefits, especially the subtle but serious risk of an eroding principle of distinction. States should therefore, in principle, prevent civilian participation.

This is not what the Ukrainian authorities are doing. Ukraine does not prevent civilian participation but actively mobilizes the population.⁴⁶ The Ministry of Digital Transformation promotes the use of the E-Enemy feature of the Diia app: “Anyone can help our army locate Russian troops. Use our chat bot to inform the Armed Forces.”⁴⁷ And the ePPO app is touted as being able to let “civilians help shoot down drones and missiles in Ukraine.”⁴⁸ Participation is expected and encouraged as a patriotic duty. While the *de facto* military advantage may or may not justify such mobilization of civilians, it seems that, at a minimum, Ukraine has a moral responsibility to properly inform its citizens of the implications of those contributions. As participation takes the form of something entirely familiar like using the governmental app to quickly upload photos, it is not at all clear that civilians are aware of those implications.⁴⁹ Using one’s phone is usually not associated with “doing something warlike” and taking lethal risk. Therefore, there is a special responsibility for states to inform citizens so that they understand the dangers involved and the potential loss of protected status; that is, their choices need to be informed choices.⁵⁰

CONCLUDING THOUGHTS

Technology enables new ways of mobilizing civilians for war efforts, with unmistakable military advantages. It also, however, lowers the threshold for direct participation in hostilities and blurs the military-civilian distinction, possibly eroding the principle of distinction over time. Therefore, I have argued that, in principle, states ought to protect their civilians by upholding the distinction between combatants and civilians, keeping the latter out of harm’s way. More specifically, states should be extremely cautious when it comes to actively mobilizing civilians and, at a minimum, inform them about the implications of using their smartphone to participate in hostilities.

NOTES

- ¹ See, for example, Andrew Barros and Martin Thomas, eds., *The Civilianization of War: The Changing Civil-Military Divide, 1914–2014* (Cambridge, U.K.: Cambridge University Press, 2018). Related to the civilianization of war is the concept of “participative war,” addressed in, for example, William Merrin,

- Digital War: A Critical Introduction* (London: Routledge, 2018); and Olga Boichak and Andrew Hoskins, "My War: Participation in Warfare," *Digital War* 3 (December 2022), pp. 1–8, link.springer.com/article/10.1057/s42984-022-00060-7. Also related are the concepts of "total defense" and "whole of society" approaches to national security, which received renewed global attention after the Russian invasion of Ukraine.
- ² International Committee of the Red Cross, *Annual Report 2008* (Geneva: ICRC, 2008), pp. 90, 872, 837, www.icrc.org/en/doc/resources/documents/annual-report/icrc-annual-report-2008.htm.
 - ³ I use "conventional" just war theory, also called "traditional" or "orthodox" war theory, to refer to collectivist, state-based accounts associated with Michael Walzer. I use "revisionism" as an umbrella term to refer to the critical current within just war theory that takes an individualist perspective, such as represented by Cécile Fabre, Helen Frowe, Jeff McMahan, and David Rodin. For more on these distinctions, see, for example, Seth Lazar, "Method in the Morality of War," in Seth Lazar and Helen Frowe, eds., *Oxford Handbook of Ethics of War* (Oxford: Oxford University Press, 2018), pp. 21–40; and Christian Braun, "The Historical Approach and the 'War of Ethics within the Ethics of War,'" *Journal of International Political Theory* 14, 3 (2018), pp. 349–366.
 - ⁴ Steven Feldstein, "Disentangling the Digital Battlefield: How the Internet Has Changed War," War on the Rocks, December 7, 2022, warontherocks.com/2022/12/disentangling-the-digital-battlefield-how-the-internet-has-changed-war/; and Kubo Mačák, "Civilianization of Digital Operations: A Risky Trend," *Lawfare*, April 5, 2023, www.lawfaremedia.org/article/civilianization-digital-operations-risky-trend.
 - ⁵ Drew Harwell, "Instead of Consumer Software, Ukraine's Tech Workers Build Apps of War," *Washington Post*, March 24, 2022, www.washingtonpost.com/technology/2022/03/24/ukraine-war-apps-russian-invasion/.
 - ⁶ Dan Sabbagh, "Ukrainians Use Phone App to Spot Deadly Russian Drone Attacks," *Guardian*, October 29, 2022, www.theguardian.com/world/2022/oct/29/ukraine-phone-app-russia-drone-attacks-eppo.
 - ⁷ "The Eppo App (Electronic Air Defense Forces App) Will Now Notify Users If There Is an Air Threat Near Them," Ukraine Media Center, August 2, 2023, mediacenter.org.ua/the-eppo-app-electronic-air-defense-forces-app-will-now-notify-users-if-there-is-an-air-threat-near-them/.
 - ⁸ Michael N. Schmitt and William Casey Biggerstaff, "Ukraine Symposium—Are Civilians Reporting with Cell Phones Directly Participating in Hostilities?," *Articles of War*, Lieber Institute, West Point, November 2, 2022, lieber.westpoint.edu/civilians-reporting-cell-phones-direct-participation-hostilities/.
 - ⁹ "Ingenious Mobile App Helps Down First Russian Missile in Ukraine," *Ukrinform*, October 26, 2022, www.ukrinform.net/rubric-ato/3601566-ingenious-mobile-app-helps-down-first-russian-missile-in-ukraine.html.
 - ¹⁰ Tim Judah, "How Kyiv Was Saved by Ukrainian Ingenuity as Well as Russian Blunders," *Financial Times*, April 10, 2022, www.ft.com/content/e87fdc60-0d5e-4d39-93c6-7cfd22f70e8.
 - ¹¹ Véronique Christory, "ICRC Statement on Existing and Potential Threats in the Sphere of Information Security" (statement, fourth substantive meeting of the Open-Ended Working Group on Security of and in the Use of Information and Communications Technologies 2021–2025, New York, March 6, 2023), www.icrc.org/en/document/icrc-statement-existing-and-potential-threats-sphere-information-security.
 - ¹² According to Roman Horbyk, those contributions can become an integral part of the "kill chain," effectively turning phones into weapons of war. See Roman Horbyk, "'The War Phone': Mobile Communication on the Frontline in Eastern Ukraine," *Digital War* 3 (October 2022), pp. 9–24, link.springer.com/article/10.1057/s42984-022-00049-2.
 - ¹³ Judah, "How Kyiv Was Saved by Ukrainian Ingenuity"; and Fred Pleitgen, Claudia Otto, and Ivana Kottasová, "'There Are Maniacs Who Enjoy Killing,' Russian Defector Says of His Former Unit Accused of War Crimes in Bucha," *CNN*, December 14, 2022, edition.cnn.com/2022/12/13/europe/russian-defector-war-crimes-intl-cmd/index.html.
 - ¹⁴ They are permitted in the sense that they cannot be prosecuted for using force in accordance with the rules.
 - ¹⁵ Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law applicable in Armed Conflicts, Art. 51, "Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol 1)," June 8, 1977.
 - ¹⁶ "International Humanitarian Law Databases," International Committee of the Red Cross, ihl-databases.icrc.org/en.
 - ¹⁷ See, for example, Cole Rabinowitz, "New Issue: Forum on Direct Participation in Hostilities," *New York University Journal of International Law and Politics*, June 5, 2010, www.nyuiljlp.org/new-issue-forum-on-direct-participation-in-hostilities/.
 - ¹⁸ According to the ICRC's interpretation, civilian immunity is regained the moment one stops participating in hostilities. This interpretation is sometimes questioned; see, for example, Schmitt and Biggerstaff, "Ukraine Symposium."
 - ¹⁹ Michael Walzer, *Just and Unjust Wars: A Moral Argument with Historical Illustrations* (New York: Basic Books, 1977), pp. 36–37.

- ²⁰ Ibid., pp. 136, 142–45. “Liability to attack” here means that because someone’s right to life is forfeited in some way, an attack would not wrong him or her.
- ²¹ Ibid., p. 145.
- ²² Ibid., p. 146. Adil Ahmad Haque, *Law and Morality at War* (Oxford: Oxford University Press, 2017), pp. 78–81. Here, Haque states that direct participation in hostilities can make civilians lawful targets, but only those who do so for an unjust cause are morally liable to defensive killing. Further, civilians participating in defense against an unjust threat are not morally liable unless their actions (threaten to) harm immune enemy civilians. Nonetheless, in Haque’s view, killing civilians like directly participating Ukrainians who fight for a just cause is less wrongful than killing civilians who do not participate.
- ²³ See Thomas Nagel, “War and Massacre,” *Philosophy & Public Affairs* 1, no. 2 (Winter 1972), pp. 123–44, at pp. 139–40.
- ²⁴ Walzer, *Just and Unjust Wars*, p. 146.
- ²⁵ Conventional JWT and IHL come apart here: workers in a munition factory might do something “war-like,” but that does not meet the direct causation criterion for direct participation in hostilities, and they therefore would not lose their legal protections (although as the factory itself qualifies as a legitimate target, they do risk being harmed and that could be permissible collateral damage).
- ²⁶ Other arguments that arrive at similar conclusions are presented in Christopher Kutz, “Fearful Symmetry,” in David Rodin and Henry Shue, eds., *Just and Unjust Warriors: The Moral and Legal Status of Soldiers* (New York: Oxford University Press, 2008), pp. 69–86; and Yitzhak Benbaji, “A Defense of the Traditional War Convention,” *Ethics* 118 (April 2008), pp. 464–95.
- ²⁷ Jeff McMahan, *The New York Times*, 12 November 2012, archive.nytimes.com/opinionator.blogs.nytimes.com/2012/11/12/rethinking-the-just-war-part-2/. For a critique of combatant asymmetry, see Dragan Stanar, “Revisionism and New Conflicts: Negation of the Possibility of War,” *Serbian Political Thought* 63, no. 26 (January 2019), pp. 227–40.
- ²⁸ Helen Frowe, *Defensive Killing* (Oxford: Oxford University Press, 2014), p. 13; and Lazar, “Method in the Morality of War.”
- ²⁹ IHL does not explicitly prohibit civilians from participating in an armed conflict, but if they do so, they would not have the protections that combatants do, and they would not enjoy immunity for participating in hostilities.
- ³⁰ Walzer discusses such moral commitments of individuals to “defend their homeland and their political community” in the context of military occupation and guerilla warfare. See Walzer, *Just and Unjust Wars*, p. 178.
- ³¹ Based on an empirical study of moral intuitions, Hanne Watkins and Geoffrey Goodwin show that many people endorse the principle of combatant equality in the abstract, but in concrete situations, combatant behavior is not judged symmetrically. However, when unjust combatants are believed to be reluctant conscripts, their behavior is judged more equally and moral intuitions are more in line with combatant equality. See Hanne Watkins and Geoffrey Goodwin, “Do Moral Judgments of War Support the Principle of Combatant Equality? What Empirical Studies Tells Us,” *Just Security*, September 24, 2019, www.justsecurity.org/65997/do-moral-judgments-of-war-support-the-principle-of-combatant-equality-what-empirical-studies-tells-us/.
- ³² See, for example, Janina Dill and Henry Shue, “Limiting the Killing in War: Military Necessity and the St. Petersburg Assumption,” *Ethics & International Affairs* 26, no. 3 (Fall 2012), pp. 311–33.
- ³³ Scott D. Sagan and Benjamin A. Valentino, “Just War and Unjust Soldiers: American Public Opinion on the Moral Equality of Combatants,” *Ethics & International Affairs* 33, no. 4 (Winter 2019), pp. 411–44.
- ³⁴ See, for example, James Pattison’s contribution to this volume: James Pattison, “Ukraine, Wagner, and Russia’s Convict-Soldiers,” *Ethics & International Affairs* 38, no. 1, pp. 17–30. For legal justifications of the independence thesis see Kubo Mačák, “In honor of Yoram Dinstei: The Separation Between the Jus in Bello and the Jus ad Bellum,” *Articles of War*, Lieber Institute, Westpoint, May 10, 2024, [lieber.westpoint.edu/separation-between-jus-in-bello-jus-ad-bellum/](https://www.westpoint.edu/separation-between-jus-in-bello-jus-ad-bellum/).
- ³⁵ See Cécile Fabre, “Guns, Food, and Liability to Attack in War,” *Ethics* 120, no.1 (October 2009), pp. 36–63, www.journals.uchicago.edu/doi/10.1086/649218#_i3; and, similarly: McMahan, *Killing in War*, p. 225.
- ³⁶ On proximate causes, see David Rodin, “The Moral Inequality of Soldiers: Why Jus in Bello Asymmetry Is Half Right,” in Rodin and Shue, *Just and Unjust Warriors*, pp. 44–68. See further, for example, *Journal of Moral Philosophy* 15, no. 6 (December 2018); and Helen Frowe and Massimo Renzo, “Introduction: Symposium on Causation in War,” *Journal of Applied Philosophy* 37, no. 3 (July 2020), pp. 341–45.
- ³⁷ This is true even if that minor contribution is followed by Ukrainian combatants acting as “intervening agents” as proximate cause. See also, in this context, Helen Frowe’s example of the Nazi informer: Helen Frowe, “Intervening Agency and Civilian Liability,” *Criminal Law and Philosophy* 16 (April 2022), pp. 181–91, at p. 187, link.springer.com/article/10.1007/s11572-020-09555-4.
- ³⁸ George P. Fletcher, *Rethinking Criminal Law* (New York: Oxford University Press, 2000), p. 589.

- ³⁹ Fabre's "fittingness test": "There should be some fit between the costs which agents, as individuals, are liable to incur for acting wrongfully and their degree of moral responsibility for their actions." Fabre, "Guns, Food, and Liability to Attack in War," p. 60.
- ⁴⁰ This, for Carolina Sartorio, is reason to reject the idea that causation comes in degrees. A civilian either causally contributes to hostilities or does not. See Carolina Sartorio, "More of a Cause?," *Journal of Applied Philosophy* 37, no. 3 (July 2020), pp. 346–63.
- ⁴¹ Because of this uncertainty, the lowered threshold for participation in war, and the value of protecting civilians, combatants ought to exercise restraint in making such assessments and assume civilian immunity unless direct participation is very clear. Also, a restrictive interpretation of the legal rules could help protect civilians who contribute to the war effort to a lesser degree.
- ⁴² For an account of the benefits of using civilian volunteers to enhance military capacities, and the suggestion that European countries proactively cultivate and optimize civilian participation, see Ulrike Franke and Jenny Söderström, "Star Tech Enterprise: Emerging Technologies in Russia's War on Ukraine," European Council on Foreign Relations, September 5, 2023, ecfr.eu/publication/star-tech-enterprise-emerging-technologies-in-russias-war-on-ukraine/.
- ⁴³ Sabbagh, "Ukrainians Use Phone App to Spot Deadly Russian Drone Attacks."
- ⁴⁴ This is especially the case as some of these apps, like Diia, are very common since they are used for other purposes as well. For such reasons, it has been argued that when citizens use these apps to participate in hostilities, the burden of proof falls on the civilian, who has to make clear that direct participation in the hostilities has ceased. See Schmitt and Biggerstaff, "Ukraine Symposium."
- ⁴⁵ As Kubo Mačák suggests, "The interpretation of the applicable law in this area is far from settled, and there are signs that some militaries might take more permissive views than those proposed in this piece. This would expose numerous civilians to grave risk of harm during armed conflict." Mačák, "Civilianization of Digital Operations."
- ⁴⁶ Ibid.
- ⁴⁷ Ministry of Digital Transformation, quoted in Lukasz Olejnik, "Smartphones Blur the Line between Civilian and Combatant," *WIRED*, June 6, 2022, www.wired.com/story/smartphones-ukraine-civilian-combatant/.
- ⁴⁸ "New App Lets Civilians Help Shoot Down Drones and Missiles in Ukraine," *Jerusalem Post*, October 17, 2022, www.jpost.com/international/article-719836.
- ⁴⁹ Of course, it might be that civilians are aware and willing to take these risks, as one Ukrainian civilian formerly with the armed forces said in a personal conversation at a conference in the Hague. See also Janina Dill, Marnie Howlett, and Carl Müller-Crepon, "At Any Cost: How Ukrainians Think about Self-Defense against Russia," *American Journal of Political Science* (forthcoming).
- ⁵⁰ For a legal grounding of such responsibility, see Dan Maurer, "A State's Legal Duty to Warn Its Own Civilians on Consequences of Direct Participation in Hostilities," *Articles of War*, Lieber Institute, West Point, February 21, 2023, lieber.westpoint.edu/states-legal-duty-warn-civilians-consequences-direct-participation-hostilities/.

Abstract: The Russia-Ukraine war demonstrates the crucial role of technology in modern warfare. The use of digital networks, information infrastructure, space technology, and artificial intelligence has distinct military advantages, but raises challenges as well. This essay focuses on the way it exacerbates a rather familiar challenge: the "civilianization of warfare." Today's high-technology warfare lowers the threshold for civilian participation in the war effort. A notable example is the widespread use of smartphone apps by Ukrainian civilians, who thereby help the armed forces defend against Russian aggression. Through the lenses of international humanitarian law, conventional just war theory, and revisionist just war theory, this essay evaluates the normative dimensions of such civilian participation. The analysis shows that civilians can lose their legal protections when they use these apps to directly participate in hostilities, and this loss of immunity can be justified by Michael Walzer's conventional just war theory. Revisionism, however, puts the justness of the war at the forefront, and so sheds doubt on the moral liability of Ukrainian civilians. Considering the broader implications, including the blurring combatant-civilian distinction, indicates that such civilianization of warfare should not be welcomed; the risks will often outweigh the benefits. At a minimum, states ought to exercise restraint in mobilizing civilians and inform them of the implications of their actions.

Keywords: Ukraine, armed conflict, warfare, new technologies, international humanitarian law, just war theory, civilianization