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IS DRONE BECOMING THE NEW "APPARATUS OF DOMINATION"?: BATTLEFIELD SURVEILLANCE IN THE TWENTY-FIRST CENTURY WARFARE[1]

ABSTRACT
The paper looks at the military use of burgeoning technologies of the Fourth Industrial Revolution in designing the visual regime of the drone as a tool for control of combat efficiency in twenty-first-century warfare. The author posits his analysis in critical theory and critical war/military studies with focus on the operationally relevant use of technical properties of the visual regime of drone observed through a wealth of video material uploaded to YouTube and related to the ongoing war in Ukraine. While many analyses delve into the combined practices of intelligence gathering, targeting, and killing aimed at the enemy, the author investigates how recent combat practices unveil the potential for an emerging role of drone surveillance: the scrutinization of combat performance of one's own soldiers. In the age of a highly professionalized and industrialized warfare, inherent to the politics of military interventionism aimed at maintaining liberal peace across the globe, the shift towards a pervasive control over the combat "assembly line" reconstitutes technological character of the drone so that it becomes an apparatus of domination. The author concludes that the drone as mobile platform for surveillance displays hidden potentials to reinforce the existing relations of domination and cautions that the advent of nano-drones could socially constitute far more intrusive and intimate control of ground troops.

KEYWORDS
drone surveillance, panopticism, domination, soldiering, military technology, critical war studies, war in Ukraine

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Post-heroic War as Industrial Process and Commodification of Death

The Clausewitzian juncture between state, army, and society – mirrored in the general military service as an institutionalised ritual of public confirmation of loyalty to the nation-state – has been in part corroded in the post-Cold War era (Owens 2007: 48). Not only was the model of general conscription gradually abandoned in many postindustrial democracies in the early 21st century, but the recruitment crisis (Ross 2011) marked the transition to the age of post-heroic warfare, in which most citizens relinquished soldiering as a fundamental civic obligation. In his thesis on "the post-heroic age", Luttwak (1995: 122) underlined another side of the new ontology of present-day warfare: the hesitation of military and political leaders to expose their own soldiers to suffering due to an increasing public aversion to casualties. Post-heroic warfare became "riskless warfare" (see Coker 2002; Kahn 2002; Kober 2015; Sparrow 2021). At the turn of the century, most postindustrial democracies, led by the United States within the framework of NATO, reshaped their militaries to fit the model of the Western way of war – rational, surgically precise, orderly, controlled, fully professionalised, and highly specialised (Buley 2008; Black 2010). The complexity of modern armies has grown in terms of organisation, specialisation, education, battlefield mobility, hardware, and technological sophistication through the internalisation of the concept of a Revolution in Military Affairs in conventional doctrines (see Collins and Futter 2015; Martyanov 2019: 69–91). The military profession had not only been commodified (Coker 2001: 92–96), but it also borrowed from the corporate managerial methodology effectiveness, efficiency, and results-oriented performance as key organisational principles (see Weber, Eliasson 2008: 50–55). In his account of the First Gulf War, Baudrillard (1995) argued that war was transformed into a set of operational procedures inherent to the administrative model of regulation of social processes rather than to the classical ontology of war as an antagonistic exchange between subjectivities of different political units. Drawing on the utilitarian logic of late capitalism, military planners transformed the combat operation into an industrial process (Nordin, Öberg 2015: 402–403). War, thus, became a modelled, easily repeatable "production cycle" whose results and outcomes are subject to constant evaluation based on quantitative performance standards (see Kapstein 2012).

Recurring debates about the most effective way of waging war have been centred around what component is decisive in winning war: military technology and hardware or human resources, i.e., how military means as well as knowledge and skills are used in the context of a particular armed conflict. The exciting possibilities inherent in advanced technology have oftentimes been praised as a decisive prerequisite for defeating the enemy (Jordan et al. 2016: 442–447). Yet, as Bellamy (1990: 13) contends, military history suggests that technology alone has never been the decisive factor in winning war: the victory has rather been an outcome of a proper understanding of how the will

to fight relates to the quantity and quality of available military resources, as well as the application of strategy and tactics. As the ultimate objective of war in the 21st century remains the same as it has ever been – to sustain one's own will to fight until breaking the enemy's will to fight – highly disciplined ranks and files are still essential. As obedience to orders is necessary to achieve military objectives, the discipline lays on individual integrity as much as it is enforced by sanctions for failure to follow regulations and instructions (Beede 2010: 746–747). Historically, the politics of army discipline have summed up a series of gestures and techniques directed at shaping man into an endurance and finely tuned "killing machine", drawing on the inculcation of warrior attributes into an individual's value system (Jindy Pettman 1996: 66; Goldstein 2004: 410–411). What still makes war wagable today is placing men in the subordinated, marginalised, and vulnerable role of soldiers through mechanisms of domination intrinsic to the political economy of late capitalism (Nunes 2020), further intensified by the internalised pressure of social expectations related to performing the ideals of militarised masculinity (Myrttinen et al. 2017).

The logic of waging war as an industrial process constitutes the commodification of death as a new mechanism of subordination and oppression. Death now has an exact market price that includes monthly income, the amount of future social security, and compensation for a possible permanent disability or the payment of compensation to soldier's family if she/he dies on the battlefield. Strand and Berndtsson (2015) pointed out that the process of recruiting "the enterprising soldier", as they name it, has been sugar-coated not only in market-driven arguments and values but in the promise of the army profession as a necessary component in self-fulfilment and personal development (2015: 245). Attempts by neoliberal governments to overshadow the political nature of the act of enlisting in the military by advertising it as a genuinely personal project (Strand, Berndtsson 2015: 245) seem to fade in the face of the ongoing, prolonged global recession. The traditional Clausewitzian nexus between the state, the military, and society has been further unravelled by deepening economic inequalities. Monetisation of body and life became notably relevant in the circumstances when the income gap between rich and poor, initially caused by neoliberal policies implemented since the 1980s, continued to widen in the aftermath of the global financial crisis of 2008 due to austerity policies (Field 2018: 89–90). Cowen (2007) showed that voluntary military service actually exposed the fact that the largest number of recruits came from socially and/or spatially marginalised strata. In the last two decades, a typical young person who considers joining the US Army originates from Black and Hispanic communities and is motivated by ensured income, the potential to set aside savings, and retirement benefits (US DoD 2022: 4, 13). The youth from marginalised populations opt for the commodification of body and life as it seems to be the only way up the social ladder and towards securing their personal future. These acts of despair support Nunes' (2020: 253) claim that "dominated groups are vulnerable to decisions and outcomes with a high impact upon their lives, and which they cannot control or even predict".

The utilitarian logic of late capitalism and the concomitant policy of US-led military interventionism across the global periphery view soldiers as vulnerable employees prone to inefficient combat performance due to stress and trauma. The human body, or wetware in contemporary military terminology, is the weakest element of the triad comprising hardware, embodied in the wide array of high technology, and software, embodied in information and communication technologies (Lucas 2010: 290–291). An additional common problem is the tendency of military personnel to "perform a minimal amount of work at a marginally acceptable level" (Beede 2010: 748). The command-and-control system, fundamental to the effective performance of troops on the battlefield, has grown in size and complexity so much so that the increasing volumes of information available in the decision-making loop have made land forces increasingly hard to control in the fog of war (Jordan et al. 2016: 89–90). As human aggression is not genetically determined, soldiers rarely act as enduring, finely tuned, and morally insensitive "killing machines"; instead, they largely avoid killing their enemy counterparts in close combat (Grossman 1996).

One avenue of the military utilisation of burgeoning technologies of the Fourth Industrial Revolution goes towards the gradual reduction of the human fighting force on the battlefield by semi-autonomous unmanned systems and, in perspective, its complete replacement by lethal robots as fully autonomous systems (Korać 2018). In the last two decades, the design and utilisation of semi-autonomous unmanned systems have gone the furthest in the air force.[2] Unmanned aircraft systems, commonly known as drones, can have fixed wings or multirotors and serve a variety of purposes: reconnaissance, surveillance, patrolling, intelligence gathering, tracking, and lethal missions. While there has been increasing research in various disciplines that delves into the political, legal, military, social, and ethical aspects of drone operations of intelligence gathering, tracking, and targeted killings aimed at the enemy (Gregory 2011; Holmqvist 2013; Strawser et al. 2014; Chamayou 2015; Allison 2015; Shaw 2016a; Gusterson 2016; Grayson 2017; Hazelton 2017; Enemark 2017; Meisels 2018), there is a lack of emphasis on how drones are utilised as a tool of the command-and-control system aimed at the performance of one's own fighting human force on the battlefield. For instance, Shaw (2016b) and Chamayou (2015) have tackled the technology of dronopticon, but only in regard to its civil utilisation in the policing of urban areas or aimed at specific segments of populations.

In the last decade, scholars have examined the sense of proximity to ground troops inculcated by the video feeds from drones (Gregory 2011), a practice of lethal surveillance that merges mechanisms of surveillance and knowledge

2 There are two main types of unmanned aircraft systems: 1) Remotely Piloted Aircraft (RPA), which is remotely controlled from a ground control station, from where they are guided by a pilot with accompanying crew connected to the command centre; and 2) Unmanned Aerial Vehicle (UAV), which follows a predetermined programme of combat action.

production with decisions on life and death (Kindervater 2016), how the perception of military gaze has changed along with revolutionary advances in technology (Bousquet 2018), and the importance of the scopic regimes of drones for the production of the political in international relations (Grayson and Mawdsley 2019). I argue that recent combat practices have exposed the potential of the visual regime of the drone for permanent surveillance of one's own soldiers as to scrutinise their performance of assigned combat missions. The fusion of drone technology and the latest enhancements in video technology gives the command possibilities to render the battlefield visible and impose flexible and mobile control over its own troops. By viewing the battlefield from a God-eye-like perspective, the command hopes to impose order upon the chaos of a combat zone so as to achieve desired operational objectives in an efficient way. My thesis is empirically based on the operationally relevant utilisation of technical properties of the visual regime of the drone observed through a wealth of video material on the ongoing war in Ukraine available on YouTube. The war in Ukraine is selected because it has so far been the best documented armed conflict via combat video footage accessible to the general public. I am interested in uncovering the potential for surveillance that drones have as mobile platforms with a view to reproducing the relations of dominance within the interaction between the drone as agent of seeing and the soldier as object of seeing. In addition, I will attempt to highlight plausible professional implications of the global availability of such top-down objectivity in combat performance via online video material.

Machines have long been used as instruments of tracking human actions in war, but their role has become inevitable recently, so much so that the body of present-day *homo militaris* is "eaten up, invaded, and controlled by technology" (Virilio 2001: 43). In his seminal analysis of how a regime of globalised remote lethal surveillance enables sophisticated procedures of tracking and nullifying human force and military hardware, Bousquet (2018) associates visibility with fatal vulnerability. Building on Bousquet's thesis, I aim to investigate how drones as agents of seeing make soldiers as agents of fighting increasingly vulnerable on the present-day battlefield. In 21st century warfare, extended vulnerability caused by the god-eye seeing capacity of the drone makes soldiers additionally susceptible to the reproduction of domination through a sort of "dronoptical" oppressive practices. I will posit my analysis in critical theory and critical war/military studies by referring to two theoretical stances: 1) the weapon is politically and socially constituted by the fashion in which military leaders and planners utilise its technical features in military strategy, rules and procedures, and combat operations; 2) the understanding of war has to include the perspective of soldiers implicated in combat experiences through mechanisms of domination. In the central part of the analysis, I will discuss the ways in which the interaction between the combatant and the weapon, now heavily affected by the latest technical innovations, may have new implications for soldiering in future wars.

Why is Modern Technology Intrinsically Dominating?

The advances of the Fourth Industrial Revolution have reinvigorated debate on the interconnected nature of knowledge/technology and power, as well as the role they play in preserving the existing mechanisms of domination in the system of sovereign states and the globalised economy. The tension between the Enlightenment project of human liberation and prosperity and ever- emerging and evolving modes of domination was one of the major issues theorised in the works of the Frankfurt School. While Horkheimer and Adorno (2002) investigated how technical rationality is embedded into the culture of the technocratic society and how it is instrumentalised through modern technology for manipulative political purposes, Marcuse elaborated how the scientific method provides conceptual ground for evaluating modern technology as a form of social control utilised for the ruling class's interests (Marcuse 1986: 157–158). Marcuse, thus, claimed that "[t]echnocracy, no matter how 'pure', sustains and streamlines the continuum of domination" (1969: 56) because "[n]ot only the application of technology but technology itself is domination (of nature and men) – methodical, scientific, calculated, calculating control" (Marcuse [1968] 2009: 168). Marcuse cautioned that "[s]pecific purposes and interests of domination [...] enter the very construction of the technical apparatus" (Marcuse [1968] 2009: 168). Marcuse differentiated technology from technics: "technics" are instruments (or devices) that are used to transform nature in the service of human beings; "technology" is the organised totality of instruments intertwined with the ways of its usage that are embedded in social relations (Marcuse [1941] 1998: 41–42; [1961] 2001: 45–46; [1964] 2002: XVI). In Marcuse's view, a technical device is always constituted within a web of human relations and meanings related to its social usage, and it is, at the same time, defined by a mission given within the matrix of the capitalist performance principle (Marcuse [1960] 2011: 136–137). An "all-embracing apparatus of domination" puts together technology and technological rationality, which "functions according to the standards of efficiency and precision", and employs them as the contemporary tools of perpetuating and extending the capacity for large-scale and efficient exploitation and domination (Marcuse 1998: 77). Further developing Marcuse's stance against the neutrality of modern technology, a critical theorist of the new generation Feenberg (2002: 7), demonstrated that technology reconstitutes the whole of the social world as an object of control. Being conceptualised as a framework for ways of life that embody values, technology has an overwhelming social impact due to its diverse design options, which are "socially and ethically significant and so cannot be discounted" (Beira, Feenberg 2018: 63). Feenberg viewed technological rationality as a "mould" for shaping technical systems so as to fit the specific demands of a system of domination (Beira, Feenberg 2018: 76). By having employed the notion of the social code of technology (or the technical code of capitalism), Feenberg defined a device "in strictly technical terms in accordance with the social meaning it has acquired" (1999: 87–88). This social meaning

is biased due to the different, or even opposite, interests and viewpoints that social groups, especially those in power, always attempt to build into the design of technical devices (Feenberg 2017: 32).

Critical War Studies transcends the instrumentality of war as the object of the research and attempts to uncover "wars' cumulative, unasked-for and frequently unforeseen product" (Brighton 2019: 134–135). Being an outcome of war as a generative force in human affairs, the reproduction of domination starts on the battlefield but extends far beyond. Drawing upon Foucault's accounts of war and "capillary" mechanisms of exercising modern power (Foucault 2003: 23–60, 242–254; [1978] 1995: 195–228), it is safe to claim that war, as a mode of control over "men-as-living-beings", has always been directed as much against the Other itself, that is, an enemy political unit, as against its own society. War politically embeds itself into the matrix of social relations – constituted within the liberal democratic state – so that its own soldiers become subject to the microcosmic practices of disciplinary power aimed at transforming "docile bodies" into killing machines. Along with the rise of advanced video and communication technologies, surveillance is becoming a key component of effective disciplining mechanisms in the military. Foucault considered Bentham's Panopticon a universal model of power and a figure of political technology for the control of large group behaviour (Foucault [1978] 1995: 200–205) because it technically creates the conditions in which the intervention over the subordinated is easy to perform at any time, "spontaneously and without noise", and yet "it acts directly on individuals", overwhelming them by the state of permanent pressure, exercising "power of mind over mind" (Foucault [1978] 1995: 206). In exercising power through surveillance, Panopticon, in Foucault's words, "can constitute a mechanism in which relations of power may be precisely adjusted, in the smallest detail, to the processes that are to be supervised" (Foucault [1978] 1995: 206).

In line with Marxists' assumption that the design of industrial technology reflects the requirements of direct supervision over capitalist production (see MacKenzie 1984) and Foucault's account of the disciplinary technology of labour, Feenberg considered the assembly line as a technical and organisational response of the management aimed at enforcing labour discipline to increase productivity (Feenberg 1999: 87). Ramey considered neoliberalism "a way of marking, counting, surveying, and controlling subjectivity in conformity with demands for efficiency, productivity, flexibility, and the complete exploitation of so-called human capital" (Ramey 2016: 53). I suggest that Feenberg's rendering of the assembly line, combined with Ramey's insights, corresponds to the context of conducting combat operations on the twenty-first century battlefield, in which combat discipline has to be imposed decisively against contingencies of the "fog of war" – if the command intends to achieve operational goals in an effective way. As the war machine is still substantially hierarchical, the efficient surveillance of the combat "assembly line" emerges as one of the vital prerequisites for the successful performance of soldiers entangled in the chaos of fighting.

The Utilisation of Drone Technology in the War in Ukraine: Drone as New Panoptic Tool?

The weapon is politically and socially constituted by the fashion in which military leaders and planners utilise its technical features in the context of military strategy, rules and procedures, and combat operations. An object is transformed into a weapon through the process of combining its physical features with the social context of its utilisation; only taken together, they create the potential for domination through the threat of or production of death and corporeal destructive force projected at the enemy (Bousquet et al. 2017). For Benjamin Meiches (2017), the material dimension of weapons, their design, and their construction features are inseparable from the relationship between people and objects. Meiches holds that the weapon is no longer just an object, a tool mastered by the human ability to decide at will: it also becomes a sort of agent with the formative power of shaping certain types of human behaviour (Meiches 2017: 15–16). There must always be intentionality behind technical details as the prime cause of the use of any type of weaponry. Unlike human beings, weapon's structural features do not have "original intentionality" or inherent intentionality, but an intentionality derived from the interpretation of their design characteristics by the constructor and the end user (military planners and commanders). Military leaders and planners imagine and interpret the desired technical features of a weapon and define their specific needs in the form of a set of requirements for designers and constructors.

In the last two decades, the use of drone technology in US-led military interventions across the global periphery has been largely associated with the practice of lethal surveillance as a necessary step towards targeted killing of the enemy. Contemporary warfare is, thus, centred around the production of aerial still photographs and video imagery (Virilio 2001: 38), so it is not surprising that the visual regime of the drone and its effects of hypervisibility have been at the heart of recent critical scholarship in war/military studies. One of the most common themes has been how the surveillance component of drone technology comes into play in relation to domination and control through the production of specific knowledge on the enemy, which is mediated and filtered via video imagery of the ground below that is visible on the screen in front of the drone operator (Hall Kindervater 2017: 29–33). The original (or primary) role of the drone as a device of surveillance can also be interpreted in terms of constructing knowledge within the logic of projecting police power, but is now utilised for the politics of (neo)liberal military interventionism (Neocleous 2014: 153–162). In this paper, I am rather interested in exploring the ways in which drones are employed in combat zones as cutting-edge panoptic devices as much as in identifying the universal implications regarding what can be done with the knowledge produced by the view from above.

In his notion of the logistics of perception, Virilio emphasises that an effective performance of combat tasks requires the uninterrupted flow of accurate

intelligence, especially visual information, headed for the assigned military units (Virilio 2001: 171). The drone technology delivers an absolute and perpetual presence in the air for a continuous reproduction of command's domination over its troops deployed in the combat zone. Unlike satellite monitoring from Earth orbit, drones bring the advantage of a 24-hour capability of video surveillance of the battlefield (uninterrupted by the clouds) and, in particular, close and focused observation of behavioural patterns of targeted ground troops (Gusterson 2016: 21–23, 60–64). In addition to the persistent watch, Chamayou (2015: 38–45) argued that the innovations referred to as "a revolution in sighting" enabled the totalization of perspectives (an extended field of vision compounded of a number of aggregated images into a single overall view), the post-festum analysis of recorded video imagery enriched by the fusion of massive data collected by various sensors, as well as the "cartography of lives", that is, identification of the unusual behaviour patterns and anomalies on the battlefield.

Over the past year, there have been three types of drones utilised by Russian and Ukrainian militaries in surveillance, reconnaissance, and combat missions: 1) unmanned aerial vehicles (UAVs); 2) self-destructing ("suicide") drones; and 3) low-cost commercial drones or other remote-controlled flying devices (González 2023). Although all three types of drones are equipped with high-resolution and thermal-imaging cameras that are capable of gathering aerial photography, video, and other intelligence data in real-time, for the purpose of this analysis, only the utilisation of drones of types 1 and 3 is relevant, as they are mostly deployed for visual control over the battleground. Yet the largest portion of video imagery available online has been recorded by commercial drones or other low-priced remote-controlled flying devices due to the latest enhancements in video technology. Unlike a decade ago, when the low-quality of surveillance imagery oftentimes undermined reliable detection of enemy human targets, such as combatants/terrorists (Woods 2015: 267), the analysed video imagery produced in the course of the war in Ukraine shows that the standard omnidirectional binocular vision system combined with full high-definition resolution of videos (4K FHD) now enables the drone operator to evaluate the combat dynamics by zooming in up to 56 times.

Dozens of drone combat videos are uploaded on YouTube every day: oftentimes unsettling official military footage subsequently shared by so-called military bloggers and, eventually, recast by mainstream and alternative media. I have limited my investigation to the video material on YouTube, as it is the second most popular social media according to the number of monthly active users (DataReportal 2023: 182). My analysis of the drone viewing of combat scenes is based on a synthesised description of the most common elements of those scenes as observed in combat video footage uploaded on YouTube, in the period from 1 March 2022 to 1 April 2023. The videos are selected via the YouTube search engine by the following combinations of key words in English, Russian, and Ukrainian, respectively: "drone footage war in Ukraine",

"дрон видео война в Украйне", "дрон відео війна в Україні".[3] Only videos associated with the Ukrainian and Russian militaries, as well as videos broadcasted by mainstream media, are included in the empirical material. When it comes to the measure of popularity of combat videos among users, the analysis shows that videos uploaded in the early months of the war in Ukraine have so far reached between several hundred thousand and over twenty million views.

The observed video material suggests that the operational utilisation of the visual regime of drones can be organised by three levels of aerial viewing of the battlefield. The panoramic angle of viewing, or wide-area field of view, captures the battleground in large size, providing the gaze over a large-scale manoeuvre of various types of ground combat vehicles (tanks, armoured personnel carriers, infantry fighting vehicles, etc.). The panoramic video imagery typically allows a God's eye view of the vivid dynamics of projecting firepower during the course of a battle: combat or transport vehicles being hit with rockets or shells; soldiers jumping off to escape a blaze, running away to the safety of nearby bushes or woods (see e.g. The Sun 2022c; Война в Украине 2022a). Another group of panoramic combat videos absorbs the viewer into the dynamics of street fighting in urban areas with a God's eye view over the infantry manoeuvres: soldiers exposed to enemy crossfire moving delicately from house to house and, eventually, trapped by a house collapsing under mortar attack (see e.g. Ukrinform TV 2023). Some panoramic videos show airstrikes or ambushes of enemy convoys moving along the road or across the bridge: explosions, vehicles burning, bodies flying through the air from blasts, or falling off the speeding vehicles trying to escape the fire zone (see e.g. Kanal 13 2023a; The Sun 2022b). The depth of gazing into the fierce nature of battle is somewhat limited to the insight into destruction of military hardware or civilian objects. Yet even from the panoramic angle, the death of combatants is visible to some extent, but it is still not intimate: the viewer can see only remote silhouettes of anonymous corpses.

The next level of aerial viewing has been brought about by video footage shot from lower altitudes or with the help of digital zoom, which magnifies the observed part of the terrain. This group of combat videos available on YouTube typically offers a close and focused observation of targeted ground troops in the trenches or in the forest. Here the visual regime of the drone infiltrates the tactical stratum of combat operations revealing a more detailed image of the behavioural patterns of soldiers (daily routine, unit discipline, combat moral), as well as what exactly is the condition of their supplies (food, outfit, armament, ammunition, and equipment). At this level of aerial viewing, drone video imagery immerses the viewer deeper into the true horrors of close combat as fighting is visible in more detailed fashion: soldiers are seen firing and dropping bombs at enemy counterparts, getting hit, crawling wounded, or lying down motionless (see e.g. RuPon 2022). A fairly popular "subgenre" includes video

3 On the Filters menu within the search engine, I opted for "Video" to limit the type of desired results.

imagery of drones dropping hand grenades on unsuspected enemy soldiers in a wide range of situations and locations – sitting in or on the tank (or any other sort of combat vehicle); hidden under the trees; taking a break in gardens (in urban areas), fields, trenches, and foxholes (see e.g. Война в Украине 2022b). The viewer can watch how a hand grenade is dropped down by the drone on the unsuspected enemy soldiers, the moment of hitting the human target, and the aftermath of the explosion, that is, the reaction of the stricken soldiers: some of them are stunned, while others are visibly injured (e.g. they are seen limping or crawling or are being taken care of by their comrades). Another group of videos is related to trench assaults and presents the utter brutality of close combat: the viewer is watching the cat-and-mouse game with a tragic ending for the overpowered combatants (see e.g. The Telegraph 2022; Kanal 13 2023c).

The level of aerial viewing closest to the ground, in the form of close-ups, gives an intimate and most detailed insight into the dynamic of battlefield activities. Recent generations of drones deployed in Ukraine have a vision system that enables 4K FHD videos, and are equipped with powerful digital zoom, with which it is now possible to watch not only what exactly combatants are doing in the fire position but even their emotional state. This "subgenre" of videos shows close-ups of enemy soldiers being chased by drones hovering just above their fighting position, running away through the system of trenches, helplessly hiding from mortar or tank attacks, or being hit by dropped hand grenades (see e.g. The Sun 2022d). The main difference in the drone visual regime at this level compared to the previous level of aerial viewing lies in the most intimate possible look at bloodshed and human suffering – without getting oneself involved in war. The savagery of combat operations is now available to the viewer untamed and in its totality: the pain that the injured or maimed soldiers are experiencing is completely visible on their faces, either in the movements of their bodies or in their absence (see e.g. Kanal 13 2023b). Elsewhere, the intrusive all-seeing eye of drone combat videos reveals the agony of soldiers facing forthcoming death as they are waiting for a developing enemy assault on their fox hole/trench (see e.g. Combat Group K-2 54th brigade 2022; The Sun 2022a). Drone surveillance in the form of close-ups lifts the veil off the horrific reality of the battlefield, so much so that barely anything is left concealed.

All-seeing Eye is Hovering Over the Combat "Assembly Line": Some Implications for Future Warfare

Marcuse's idea of the continuum of domination, Feenberg's view of the transformative power of technology in remodelling our social world as an object of control, and Foucault's thesis on the supporting role of the panopticon on the apparatus of power inspire, as to paraphrase Clausewitz's famous saying, the continuation of domination by other means. The examination of observed drone video imagery from the war in Ukraine suggests the panoptic potentials of drone surveillance as an effective and cheap high-tech disciplining instrument

for the early twenty-first century militaries.[4] The insight into the work of the visual regime of the drone for extensive remote surveillance in this war uncovers the potential of the drone as an agent of seeing to oppress the soldier as an object of seeing. Reflecting on Bousquet's (2018) pairing of visibility with fatal vulnerability, I argue that the technically advanced mode of tracking human force exposes soldiers to diverse vulnerabilities.

Hovering steadily over the battleground and being integrated with the technical feature of digital zoom, which enables even identification of facial expressions, the all-seeing eye of the drone signifies a revolutionary turn in the command-and-control system. It is a step forward to the construction of Bentham's Panopticon and to the embodiment of an intrinsic neoliberal desire, driven by profit maximisation, to establish exhaustive control over production (i.e., combat operation). Borrowing from Feenberg's conceptualisation of the assembly line as a technical and organisational response aimed at enforcing labour discipline (Beira, Feenberg 2018: 78), I propose that the concept of the assembly line corresponds elegantly to the context of conducting combat operations on the present-day battlefield, in which the combat discipline of professionalised armed forces has to be imposed decisively against contingencies of the "fog of war" – if the command is to achieve operational goals in a cost-effective way.

Drone surveillance replaces traditional ways of interaction between the command and the subordinate units deployed in combat operations. Instead of oral or written modes of exchange of information about the course of operation, drones enable direct optical and in-real-time oversight of the combat performance of subordinate units (and their commanders as well). The commander of the operation is now sitting behind the screen, monitoring promptly how the battle is developing in terms of every single manoeuvre and the unit's firing efficiency. Every mistake made on the battleground is now visible, that is, it can hardly be concealed from or justified to the higher level of command. The command-and-control system has obtained a "shortcut" in the process of decision-making as a subordinate unit is supervised directly. The drone camera gathers intelligence about the unit's performance through its sensors, unlike in the past when the higher level of command had to rely heavily on indirect and periodic reporting from the lower level. In this way, taken from the utilitarian logic of cost-benefit evaluation of military actions, drone surveillance brought

4 One might argue here that combat motivation, in general, varies in terms of whether soldiers fight a just war (or at least, one that is perceived as just) or are dispatched as expeditionary forces in some distant region to support vague foreign policy interests of their country in its struggle for global power. It is true that the motivation of most Ukrainian soldiers undoubtedly emanates from their allegiance to patriotic/civic duty to defend the nation under the existential threat brought about by foreign military invasion. While it seems that in the case of the war in Ukraine an oppressive dimension of drone surveillance is largely minimised or absent, the panoptic design of the visual regime of the drone, as it is employed now, may in the future contribute to oppressive mechanisms inherent to the political economy of late capitalism and the utilitarian logic of professional military service in the case of liberal interventionism.

a greater possibility of achieving higher efficiency in combat. Yet the room for discretion in decision-making at the lower level of the command chain has been tightened, with probability of diminishing due to the limitation imposed on the range of possible actions open to lower level commanders. The trend of dealing with the combat zone as an assembly line can, in the long run, affect the creativity of low-level commanders when it comes to deliberation of the optimal way leading to the achievement of operational objectives.

The corporeal dimension of military discipline seems to have become obsolete and redundant; yet the subordinated human force is objectified by sudden, continual, highly mobile, and intimate drone surveillance. Mechanisms of domination are now sophisticated in terms of accuracy and precision in adjusting the supervised combat activities. Drones are now agents of seeing, while soldiers are constituted as objects of seeing. Hi-tech sensors integrated in the visual regime of the drone bring into reality an old technocratic dream of an "ever-present watcher" (Singer, Brooking 2018: 58). Marcuse ([1941] 1998: 144) reminded us that "human behavior is outfitted with the rationality of the machine process", which implies that the adjustment of a soldier's action to the technical features of drone surveillance does not leave much room for autonomy. The negation of commanders' and combatants' capacity to make uncoerced decisions on the course of action corresponds to Agamben's observation that the apparatuses in late capitalism are immersed in the processes of desubjectification (Agamben 2009: 20–22). In the long run, desubjectification of soldiers raises the problem of erosion of mutual trust between combatants and their immediate (unit) commander (and higher levels of command as well), which, in turn, demands even more extensive control. From a psychological perspective, Lloyd Strickland (1958) demonstrated empirically that management cannot determine whether highly surveilled employees can be trustworthy because they have never had the opportunity to act outside the restrictive conditions. Strickland (1958) also argued that permanent surveillance undermines as much trust in management as it impairs intrinsic motivation.

Practising the model of assembly line to enforce labour discipline on the present-day battlefield through drone surveillance is likely to instill fear in many of the troops in combat zone, which is inconsistent with contemporary military practice of relying mainly on self-discipline and social pressure (Kellett 1982: 143–148). However, it is hard to improve combat motivation in such way; constantly watched soldiers will feel deeply distrusted by their command and, thus, will fight with resignation rather than with eagerness. Combat motivation, which is integral to personal courage, and mutual trust between the commander and his soldiers, as well as between soldiers as comrades in arms, are corner stones of the military profession (see Kellett 1982). Highly surveilled combatants, thus, are likely to find themselves additionally distressed in combat operations if they develop a feeling of doubt or uncertainty about whether their fellow fighters or the commander will stand with them and help or safeguard them in the chaos of battle (Robinson 2006: 176–180). Maintaining social cohesion within a combat unit might be difficult under the pressure of being

watched from above while operating on the "assembly line" in an attempt to achieve military effectiveness. It is no wonder that, according to recent findings of the Ukrainian Institute of Mental Health, the surveyed Ukrainian soldiers exposed to drone surveillance for extended periods of time reported feelings of anxiety, fear, and paranoia, while some of them complained about the climate of mistrust and suspicion (Frąckiewicz 2023).

The observed combat videos from the war in Ukraine also imply the potential of drone surveillance to transform soldiers from agents of fighting into sheer objects of seeing. The focus of the command might shift from the subordinate unit's combat efficiency towards the perception of how it is fighting. The drone as an agent of seeing reproduces the relations of domination over the soldier as an object of seeing in an enhanced manner. Being an unconstrained, unjust imbalance of power that enables the control of agents (in our case, soldiers) or the conditions of their actions, domination involves asymmetries in power, and it is often arbitrary or discretionary (McCammon 2018). These asymmetries are clearly visible in the fact that the surveillance practices of the drone eventually constitute an out-of-sight mode of control, taken from the perspective of those surveilled. There is an obvious imbalance in the command-soldiers relation constituted by the panoptic potential brought by the visual regime of the drone. It is not easily visible from the fighting position, as soldiers cannot be sure what or who exactly the drone is tracking as it hovers above their heads. It always remains a dilemma: Is it an adverse or friendly drone circling around in the sky, and is it going to strike or is it only gathering intelligence? The constant fear among ground troops of approaching and possible death is actually triggered by the specific hum of drone propellers. The situation in which one can hear but cannot see drones deepens the already intensive day-to-day stress innate to fighting in armed conflict.

Another example of pairing greater visibility of combat actions with the fatal vulnerability of tracked combatants comes from a new phenomenon: the prompt, massive, and widespread availability of drone combat footage on social media. Every human action in the present day can be digitally recorded via an image or a video: the record of the event will be uploaded on social media sooner or later. The panoptic practices of drone surveillance may increase domination and oppression through the possibility of control via combat drone footage uploaded on social platforms by the enemy. Tens of thousands of combat videos from the ongoing war in Ukraine already shared online provide a valuable insight into the battlefield performance of many units from both warring sides. The opposite warring side may use the enemy video footage contrary to its original propaganda purpose: as an indirect source in assessing the performance of its own units. In that way, soldiers are under additional pressure because their costly mistakes are now transparent and visible not only to their own commanders but also through online video material provided by the enemy. Drone combat videos also expose combatants and commanders responsible for failed actions to public humiliation. Some videos have insulting captions such as "Drone captures adventure of 'Ivan the Stupid' seeking to

flee from it – he couldn't find a hideout" (Kanal 13 2023b); others mock enemy soldiers as incompetent or useless: for instance, the videos in which soldiers fell off the tank before it ran into a tree (see e.g. TheNavih 2022). The panoptic potential for efficient surveillance of the combat "assembly line" emerges not only as one of the major preconditions for successful combat performance but also seems to set up a sort of double-check mechanism for the behaviour of soldiers on the frontline.

Conclusion

The war in Ukraine has been characterised as "the first war everyone can follow from the god's-eye perspective of a flying, zoom-lens-equipped camera hovering hundreds of feet over the bloodshed" (Greenwood 2023). Analysing the combat video footage from the ongoing war in Ukraine, I have drawn on critical theory to make sense of the ways in which bourgeoning technologies of the Fourth Industrial Revolution, in particular those utilised in designing the visual regime of the drone, affect or may affect the ontological status of combatants. In so doing, I have desired to identify the potentials and the complex of plausible and generalizable implications of drone surveillance for future warfare, especially instrumentalised within the politics of military interventionism based on modelling the war as an industrial process, including the perspective of the human experience of being entangled in the chaos of the battleground.

This account of the utilisation of drone design and the latest enhancements in video technology, as it has been displayed in the current war in Ukraine, demonstrates that the visual regime of the drone upholds and sophisticates further mechanisms of domination by giving the command an optimal tool for permanent oversight of the combat performance of its own troops. Clausewitz's ([1832] 2007: 1) claim that "[w]ar is an act of force to compel the enemy to do our will" seems to be equally valid when it comes to enforcing the interests of domination on citizens in the role of combatants. Ambivalent utilisation of the material-functional properties of the drone has emerged: recent combat practices exposed that the drone can be socially constituted as an apparatus of domination – the antithesis of its original purpose of "apparatus of protection". The pressing operational objective of imposing order upon the chaos of a combat zone in order to achieve desired operational objectives in an efficient way eventually created the God's-eye visual reality, in which the subordinated/dominated are surveilled on a dystopian scale. As the visual regime of the drone is transforming foot soldiers into easily disciplined factory/bureaucrat-like workers – now assigned to the segmented tasks that are being performed along the combat "assembly line" – the soldier as an agent of fighting has somewhat been downgraded into an object of seeing. Leaning on Meiches' findings on the materiality as a constitutive element of weapon, I suggest that the formative power of the drone as weapon to shape certain types of human behaviour helps reproduction of the mechanisms of domination in the military as well as in 21st warfare. Although they do not have inherent intentionality, it

seems that structural features of the visual regime of the drone "induced" its oppressive "intentionality" by "aiding" military planners and commanders to interpret specific needs of the command-and-control system so as to enhance obedience and combat efficiency on the battleground.

The interaction between the drone as an agent of seeing and the soldier as an object of seeing unveils the obvious vulnerability of human force on the present-day battlefield – fragility of human resources inherent to practices of the Western way of war. In highlighting plausible professional implications of the operationally relevant utilisation of technical properties of the visual regime of the drone that reinforce domination over soldiers, I propose that the extensive and intrusive hour-to-hour drone surveillance has intensified the oppression of soldiers on the battlefield in two main interweaving avenues. First, combatants live in constant fear not only of sudden death, injury, or any sort of suffering but now also of being permanently watched by drones (either hostile or their own), hovering almost invisibly above their heads, in the search for potential targets. Second, the domination over soldiers deployed in combat zones has been extended and intensified because of the intimate scale of recent drone surveillance performed within their own command-and-control system. Either avenue indicates that emerging technologies of the Fourth Industrial Revolution have the potential to increase domination and oppression of today's soldiers, as their lives on the battleground are now completely and continuously exposed not only to the enemy but to their own superiors as well. In line with the requirements of direct supervision over capitalist production, the political economy of late capitalism makes war wagable by maintaining the vulnerable social role of soldiers, originated from marginalised low-income populations, through subtle mechanisms of domination constituted around demands for efficient utilisation of human capital – the capital they were urged to sell to the military. The analysed practice of drone surveillance shows that domination does not necessarily imply the exercise of power. It is not decisive what commanders actually do with drones but what they are in a position to do – given the fashion in which military leaders and planners utilise their technical features in military strategy, rules, and procedures – or have the capacity to do (given the design, the construction features, and the material dimension of drones). It is fair to assume that combatants on the battlefield will be vulnerable, even if they are not actually victimised, not so much in terms of obeying or refusing to obey orders as in the sense of being subject to the social context constructed by those in power, where they will have to act as the less powerful or the powerless.

Drone surveillance, as a military practice stemmed from recent advances in the design of the visual regime of the drone, reinforces the utilitarian logic of late capitalism in remodelling the traditional role of warrior-citizen-soldier into "assembly line worker" entangled in web of "labour" discipline enforced to increase combat "productivity". While soldering used to be civic duty and matter of loyalty to nation-state, the present-day military profession is just one of many career options common for corporate world, a path towards

self-fulfilment and personal prosperity. Still, there might be even slightest seed of an emancipatory prospect in an side-effect of the revolution in designing the visual regime of drone as a tool for the control of combat efficiency. The contingent and random essence of acts of injury, maiming, and death is visualised in disturbing details thanks to HD video technology and powerful digital zoom and freely shared across social platforms. The hyperreal presentation of ferocity and bloodshed of the battlefield, in which every foot soldier is immersed, might have detrimental effects on the recruitment for future liberal wars. Traditional romanticised ideal of warrior, purified from calamity of the bloodstained truth of close combat, is now shattered by the sheer fact of high probability of imminent death, or suffering of those wounded and maimed. By becoming viral, the acts of dying and suffering have ceased to be unpleasant but well-kept secrets of the military profession.

In future wars, dangers for human force may come from the military utilisation of the further development of capabilities of face recognition and object recognition along with nano drones, which are to be the size of an insect or small bird. Battlefield surveillance by nano drones would become more intrusive and intimate, making it far harder to avoid its detrimental effects and long-term implications. This is why the anticipated trends in emerging military technologies call for the deepening of efforts in Critical War/Military Studies in examining new possible mechanisms of domination in combat operations, including the combatant's perspective of battlefield experience.

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Srđan T. Korać

Da li dron postaje novi „aparat dominacije“?: nadzor bojišta u ratovanju dvadeset prvog veka

Apstrakt

Rad pruža uvid u upotrebu naprednih tehnologija Četvrte industrijske revolucije u vojne svrhe na planu osmišljavanja i konstruisanja vizuelnog režima drona kao oruđa za kontrolu efikasnosti borbenog dejstva. Autor smešta analizu u okvire kritičke teorije i kritičkih studija rata, sa težištem na operativno relevantnim načinima upotrebe tehničkih karakteristika vizuelnog režima drona, a zasnovanu na obilju video materijala dostupnog na YouTube-u vezanog za tekući rat u Ukrajini. Za razliku od brojnih analiza posvećenih kombinovanim praksama prikupljanja obaveštajnih podataka, ciljanja i ubijanja usmerenih na neprijatelja, autor istražuje kako nove borbene prakse otkrivaju potencijale za novu ulogu nadzora dronovima: temeljna provera borbenog učinka sopstvenih vojnika. U doba visoko profesionalizovanog i industrijalizovanog ratovanja, svojstvenog politici vojnog intervencionizma usmerenom na održavanje liberalnog mira širom planete, preusmeravanje ka sveobuhvatnoj kontroli nad borbenom „pokretnom trakom“ rekonstituiše tehnološki karakter drona tako da on postaje aparat dominacije. Autor zaključuje da dron kao mobilna platforma za nadzor ima skrivene potencijale da ojača postojeće odnose dominacije i upozorava da bi uvođenje nano dronova u redovnu vojnu upotrebu moglo da predstavlja sveprožimajuću kontrolu kopnenih trupa na daleko intimnijem nivou.

Ključne reči: nadzor dronom, panopticizam, dominacija, vojnička praksa, vojna tehnologija, kritičke studije rata, rat u Ukrajini.