Rueben Steff, Joe Burton, and Simona R. Soare (eds), *Emerging Technologies and International Security: Machines, the State, and War* (Routledge, 2020, 312 pp.)

İlgi Doğa ALBASAR[1]

Book Review
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Back in the old days, when technology was growing fast, sci-fi magazines used to predict a future where cars could fly. Fast forward fifty years, and while we are not navigating airborne traffic jams, we do get the peculiar joy of hearing Kim Jong-Un serenade us with English Disney ballads, all thanks to the wonders of artificial intelligence. Admittedly whimsical, this scenario takes a turn toward the serious when we consider the flip side of technological advancement—lethal autonomous weapons. Far from the laughter-inducing image of a leader turned crooner, these high-tech marvels occasionally find themselves entangled in covert missions, leaving behind unintended civilian casualties.

What is certain is the dilemma of being in need of new technologies to counter emerging security threats while also realizing that these same technologies can give rise to new security concerns. We have not yet fully come to terms with the security concerns brought about by these new technologies, as existing regulations and previous agreements have proven to be inadequate. The edited volume of *Emerging Technologies and International Security* speaks to this literature, focusing on emerging technologies such as artificial intelligence (AI), robotics, automation, 3D printing, deepfakes, and blockchain. The book impressively brings together eighteen influential scholars from various disciplines to examine the impact of emerging technologies on how their proliferation poses challenges to international peace and security.

In the introduction, the volume's editors, Reuben Steff, Joe Burton, and Simona R. Soare, outline the core ideas and objectives presented in the book. The main contribution of this book in the discussion surrounding the influence of emerging technologies within the field of International Relations can be broadly summarized in three key arguments: First, it emphasizes and examines the potentially groundbreaking influence of emerging technologies. Second, it

[1] Işık Üniversitesi, İktisadi, İdari ve Sosyal Bilimler Fakültesi Araştırma Görevlisi, Kadir Has Üniversitesi Uluslararası İlişkiler Doktorantı, doga.albasar@isikun.edu.tr, **ORCID:** 0000-0001-8420-3574

underlines the enduring significance of human elements and socio-political environments in the development of emerging technologies and their adaptation processes. And lastly, the book seeks to enrich the ongoing dialogues on emerging technologies by delving into the issue through three levels of analysis by drawing inspiration from the groundbreaking work of Kenneth Waltz in *Man, the State, and War*.

With these goals in mind, this volume conducts a thorough exploration regarding the implications of different emerging technologies on international security by adopting three Waltzian levels of analysis—inter-state, state, and sub-state. This comprehensive approach provides readers with an in-depth perspective on the current role of emerging technologies in reshaping various facets of international politics. To organize this exploration effectively, the edited volume is thoughtfully divided into three parts, each dedicated to a specific level of analysis.

Throughout the book, the idea behind using the level of analysis approach as an analytical tool serves two purposes: First, to get a better understanding of the interplay between the international and the local in the context of technological advance across different times and places. Second, to highlight how emerging technologies erode the traditional boundaries between these levels. One of the book's main arguments is that mainstream International Relations theoretical frameworks fall short in explaining complex relationships concerning emerging technologies. In this context, one of the biggest aims is to provide valuable insights and lessons for both IR theory and practice.

However, it is evident that the book primarily operates within a realist framework, especially in its initial section, where core realist arguments, such as balance of power and polarity are employed. Nevertheless, it would be an understatement to say that the book does not give due importance to other theoretical frameworks and rigidly adheres to a realist perspective. Throughout the book, we see a comparison between the *technological determinism* approach, which attributes an independent role to technology in shaping politics and societies, and the more constructivist approach, namely *the social construction of technology approach of science and technology studies*, which argues that technologies are socially constructed and embedded, with their use determined by specific social, political, and cultural contexts. In this context, the book positions itself between these two approaches, as Joe Burton stresses in the first chapter.

The first part of the volume primarily concentrates on the international system as a unit of analysis and balance of power among various actors in the system. Maintaining the idea that AI

is a broad technological enabler rather than a weapon itself, a central premise in this part of the book posits that the advancement of AI-related military technologies will mitigate technological disparities among major powers and surely will alter military power balances, with the ongoing competition between the US and China being the focal point. This prompts an exploration into whether the escalating competition between the US and China will redefine global politics along bipolar lines. Chapters 2 and 4 offer several pivotal arguments. Firstly, the US defense community envisions a transformative impact of AI on power distribution and military equilibrium. Secondly, in Washington, concerns emerge regarding the US potentially trailing in AI development against ascending powers like China, urging initiatives to uphold first-mover advantage on AI-related military technologies. Thirdly, while there is an undeniable historical relationship between technology and the balance of military power, the widespread analogy between the Cold War space race and the AI arms race is problematized. Instead of having a bipolar nature, it is argued that the existing arms race has rather multipolar characteristics as the advancements in AI technologies will not only close the technological gaps among the great powers but also bridge the divide between them and other technologically advanced small and medium powers. Yet, as Rueben Steff highlights in Chapter 3, if smaller states fall for the illusion that AI technologies will be cheap and readily accessible in the international market, they may become overly dependent on major powers, which in the long run may foster a bipolar system favoring major powers. While most of the chapters in this part of the book focus on the balance of power configurations, on a final note, Warren and Hillas bring fresh air as they take the reader beyond the zero-sum game framework to highlight the inadequacy of existing arms control agreements in the face of lethal autonomous weapons systems through emphasizing the need for greater transparency and communication among state elites.

The chapters in the book's second part concentrate on the state as a unit of analysis to showcase how different political regimes, from democratic to authoritarian, understand and treat emerging technologies and how these developments shape the state's political doctrines and grand strategies in international affairs. Although Okpaleke and Burton in chapter 9 scrutinize the Bush doctrine and the utilization of unmanned aerial vehicles[1], states encounter both domestic and international criticism when political doctrines that are influenced by the regime type stray from what is expected from them. In the first part of the book, the predominant theme centers around technological competition as the central focus within the context of renewed

[1] The term "unmanned aerial vehicle" is retained as it is despite having gender-biased connotations for the purpose of staying true to the original work.

great power rivalry. Contrasting this, the second part transcends this notion, emphasizing that emerging technologies are not merely external variables in the realm of great power competition. Instead, contemporary challenges related to emerging technologies are inherently political, intricately woven into the fabric of different political regimes.

In the opening chapter of this section, Simon R. Soare echoes this part's general argument and contends that technologies do not operate in isolation from cultural or political influences; instead, they both shape and are shaped by the political context and human agency. This, in turn, reshapes how various political regimes pursue their enduring political interests, altering both the scope and the methods employed in the process. In this line, it is argued that political motivations, whether it is the survival of regimes in authoritarian systems or concerns about national security and democratic integrity in democratic settings, play a pivotal role in shaping narratives related to the development, adoption, and utilization of emerging technologies. The chapter underlines that authoritarian regimes ensure regime continuity by restricting and controlling citizens' access to online information. In contrast, the Western world envisions an AI based on democratic principles and liberal values. It should be noted that various AI applications that are developed in the West continue to reinforce gender, race, and ethnicity-based inequalities despite the narrative of democratic way of AI which are failed to be mentioned in the chapter. Nevertheless, this perspective naturally fosters a system where citizens have more freedom in accessing information compared to authoritarian regimes. While this practice can be the harbinger of a democratic innovation advantage, the free circulation of information also leads to the spread of disinformation campaigns in democratic regimes. As Soare stresses in her chapter, the evidence shows that authoritarian uses of these technology platforms can easily undermine this perceived advantage. Sean Ainsworth further scrutinizes the problem of disinformation as a security threat in another chapter where he focuses on Russia's two-decade long information warfare strategy as he highlights the utilization of automated bots and trolls by Russia in extensive disinformation campaigns have significant impact on power dynamics within societies and the international terrain.

The book's third and last part broadly focuses on the relationship between the state and society by examining the challenges created by emerging technologies, which affect both individuals and non-state actors. While the topics addressed in the chapters of this section may seem more independent and diverse compared to the chapters in other parts of the book, a recurring theme can still be located: the trust relationship between states and societies. Whether the focus is on cyber autonomy, cyber threats, 3-D printed firearms, or deepfakes, the discussion somehow

revolves around how potential security threats arising from these tools could escalate in the wrong hands. It emphasizes the inadequacy of existing regulations and laws in addressing these threats and underscores the paramount duty of the state to promptly enact new regulations and laws to tackle these emerging challenges. In his chapter, William Hoverd captures this notion by arguing that governments often disclose numerous cyber threats but demand blind trust without providing evidence, which inevitably creates a crisis regarding the trust level between the state and society.

Emerging technologies unveil numerous security threats at various levels. Throughout the book, these threats are explored through different cases. However, the last two chapters of this section present us with a different perspective. When correctly understood and treated, emerging technologies can have life-changing impacts on various aspects of human life. In this context, Nathan Cooper emphasizes the crucial role of new water technologies as a significant solution for communities facing water scarcity. Yet, he underscores that the success of these technologies depends on their implementation within social, cultural, political, and legal contexts. Cooper's chapter gains perhaps even greater significance when juxtaposed with Weijers' chapter. Weijers emphasizes the crucial role of narratives in shaping individual acceptance of emerging technologies, particularly in moral and ethical dimensions. He underscores that the pace of technological transformation is closely tied to societal and individual adoption. The impact of emerging technologies on human life, whether empowering or overpowering, is heavily influenced by structural and political factors and public discourse shaping perceptions. In the book's first chapter, Joe Burton rephrases the notion famously associated with Alexander Wendt as "technology is what states make of it." Perhaps, building on Weijers' chapter, a more accurate rephrasing could be "technology is what human beings make of it."

Although the book is divided into three sections focusing on different levels of analysis, the chapters within each section are not isolated from the others. For example, despite being in two separate sections and having two different units of analysis, Warren and Hillas' discussion on lethal autonomous weapons systems in Chapter 5 and Okpaleke and Burton's discussion on how drones have undermined US policy and drawn international criticism in Chapter 9 stand out as two articles that can be read together. A rather similar connection can be seen in other examples, such as Ainsworth's discussion in Chapter 8 regarding Russian information operations and Barnes and Barraclough's discussion in Chapter 12 on deepfakes and synthetic media. The

fluidity between chapters also serves as strong evidence of the blurring of boundaries within the Walzian level of analysis framework, which is one of the book's important arguments.

Overall, *Emerging Technologies and International Security* is an excellent book that invites readers and scholars of different disciplines to participate in discussions about the security challenges arising from emerging technologies. Bridging various topics and diverse cases, this edited volume is a timely addition to the emerging field of security studies literature concerning emerging technologies. Yet, there are also some areas that might benefit from further in-depth exploration or could be the focus of future research. In multiple sections of the book, especially when it comes to the use of AI-related military technology, it is noted that these developments are not fully operational in the field and may not be for a considerable period. In this context, while many discussions remain relevant, they eventually become somewhat hypothetical. Key elements of the realist approach, such as balance of power and polarity, ceased to be meaningful to an extent. Nowadays, the main discussion revolves around hybrid wars, proxy wars, and guerrilla warfare, and how non-state actors utilize these emerging technologies. Therefore, it is safe to say that emerging military-related technologies need to be more deeply explored within the broader framework of hybrid warfare. Nevertheless, this book’s most valuable contribution to the International Relations literature lies with its emphasis on the inadequacy of existing mainstream IR theories in interpreting the changes brought by emerging technologies. While this edited volume may not present a completely inclusive theory, nor does it claim to do so, this endeavor is an important step in igniting the fuse on retheorizing existing frameworks, which no longer keep pace with new developments in world politics.