

Review – Artificial Intelligence and International Relations Theories

Written by Amelia C. Arsenault

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Artificial Intelligence and International Relations Theories

By Bhaso Ndzendze and Tshilidzi Marwala

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Rapid and substantial advances in machine learning, computer processing, and ‘Big Data’ have triggered an explosion of global interest and investment in artificial intelligence (AI). AI’s allure stems from the prevailing belief that it will radically transform life as we know it, with implications for a wide range of sectors, from healthcare, education, and transportation to defense, weapons development, and cybersecurity. As states scramble to procure this emerging technology, scholars have begun thinking about its implications for the field of international relations (IR). While some scholars are hopeful that AI may be used to improve global health outcomes and facilitate trade, others are more pessimistic, warning of escalation towards conflict and the erosion of democratic norms. *Artificial Intelligence and International Relations Theories*, contributes to this debate by exploring whether the “world-transforming development” of AI will challenge, undermine, or validate the key assumptions and ideas that form the basis of IR theory (p.8).

The authors begin by identifying the central frameworks and paradigms that have defined the field of IR, providing a brief overview of its intellectual history and inter-paradigmatic debates. Ndzendze and Marwala make the important observation that IR theory has historically ‘evolved’ alongside major developments or shocks to the international system, suggesting that the ‘age of AI’ could prompt the field to revisit its theoretical foundations.

To appeal to a wide, non-technical audience, the authors provide a sketch of the basic systems, algorithmic processes, and logic behind AI, and outline its trajectory from the 1950s to the contemporary era of ‘Big Data’. Here, the authors make two important clarifications about AI’s potential implications for IR. First, they differentiate between ‘narrow’ AI, which refers to algorithms that can ‘learn’ a specific task, and artificial ‘general’ intelligence, a hypothetical phenomenon where AI could apply lessons learned in one scenario to an entirely different set of problems (p.36). The authors make the point that the systems currently being deployed are ‘narrow’ AI; and as such, they do not warrant fears of a dystopian near future where super-intelligent AI replaces traditional actors. This distinction cautions against the type of hyperbolic thinking that experts fear could misinform policy. Second, the authors maintain that scientific development and innovation have *always* been informed by global politics, pointing to early innovations in AI during the Cold War and the current competition between the US and China (p.39). This brief history clarifies that the politicization of emerging technologies is not unique to the current day and age.

Having provided readers with the necessary context, the remainder of the book is organized by paradigm, each chapter examining how the proliferation of AI challenges or supports its theoretical underpinnings. Throughout these core chapters, the authors make several astute observations about the risks, opportunities, and limitations of this technology and its influence on global politics. Indeed, they should be applauded for achieving what is undoubtedly an ambitious task — probing a field’s intellectual history to “comprehensively articulate the implications of the growing ubiquity of AI in international relations” (p.7). However, Ndzendze and Marwala’s analysis includes notable gaps that reveal a lack of breadth and depth. While the authors cannot be expected to cover every minute detail of IR

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theory, readers may find themselves searching for more — more nuance, more examples, and more interpretation of the leading intellectual debates about AI's relevance for the field. Important ideas at the core of IR theory are mentioned in passing, with no real consideration of whether the concepts aptly describe the current state of international politics in the 'era of AI', or whether rethinking is in order. The remainder of this review will outline a few illustrative examples.

The chapter on realism makes meaningful points about AI's role in the "balance-of-power rationale" and the offense-defense calculus. However, it misses opportunities for a more thoughtful summary of the potential threats that AI poses to some of realism's principal assumptions. Most notably, the authors overlook ongoing debates about the rise of automated decision-making and the concept of 'agency'. Indeed, scholars such as Kiggins (2017) have argued that the heightened autonomy and decision-making capabilities of weapons systems and other processes require that IR reconsider precisely what constitutes an international 'actor'. The question of how to characterize agency has serious implications for realism; it challenges both the classical realist emphasis on the role that 'human nature' plays in humanity's proclivity for conflict as well as structural realists' claim that unitary states are the central, "nearly exclusive" actors in IR (p.59). To their credit, the authors do note that 'Big Tech' companies, responsible for developing the most cutting-edge applications of AI, are playing an increasingly important role in global politics. Further, AI is not currently capable of independent action beyond its programmed instructions, and therefore cannot be said to have 'agency'. The authors should be commended for their refusal to anthropomorphize AI. Yet, by failing to consider whether forms of non-human agency could *eventually* challenge the realist assumption that states are the primary actor in international relations, the authors neglect urgent philosophical debates about the realist conception of 'power' in an era of enhanced machine autonomy.

Perceptions of AI as a valuable instrument of economic and military power have spurred competition for this technology, seemingly validating the realist claim that states are ultimately motivated to pursue relative gains. Given that AI can bolster countries' status, the authors develop a model that measures and predicts the "AI balance of power" using states' innovation scores, their total number of AI patents, and technology exports relative to rivals (p.66). The intuition behind this model accurately reflects the role that domestic industry can play in access to emerging technologies. However, this model obscures the distinct characteristics that undermine the utility of simple quantification through the counting of AI 'outputs'. The immateriality and invisibility of advanced algorithms and software differentiate these tools from conventional arms and industrial goods, which are largely material and therefore receptive to quantification. In the case of AI, however, patents and applications, including those with industrial and military applications, can reveal very distinctive purposes and capabilities; that is, not all AI patents or innovations are equal. By downplaying AI's unique characteristics, the authors miss an opportunity to demonstrate precisely *why* states and non-state actors view AI as particularly concerning — from attribution problems associated with autonomous weaponry to the covert usage of algorithms for nefarious purposes, it is the immateriality of AI that complicates efforts to predict states' AI capabilities.

The chapter on liberalism encounters similar issues. For instance, the authors note that the proliferation of AI is occurring alongside broader challenges to the 'liberal international order', where "democracy and artificial intelligence appear to be having a negative correlation with one another" (p.76). While this correlation is certainly plausible, the authors do not identify the mechanisms that explain *why* or *how* AI is poised to challenge democracy. This omission will strike readers familiar with this topic as odd, given the large body of literature linking AI to repression, surveillance, inequality, and disinformation. Further, the authors maintain that democratic and authoritarian regimes will differ in their approaches to AI, but they do not specify *how*. Again, this is an important differentiation — variation in authoritarian and democratic approaches to AI could tip the balance towards, or away from, a world marked by 'digital authoritarianism'. Finally, the authors mention AI within the context of international trade, but ignore a rich body of literature linking this technology to the neoliberal emphasis on the pursuit of efficiency, profit, and 'progress' (Lyon 2014; Dimitrijević 2023; Bourne 2019). In doing so, they miss the opportunity to highlight linkages between narratives that frame data-centric policies as 'rational', or 'objective' and neoliberal logic.

These shortcomings continue throughout the second half of the text. The chapter on dependency theory makes no mention of the exploitation of workers hired to do the precarious work of training AI systems, the near-monopoly of US-based 'Big Tech' firms on the global tech market, or the risk of instability should automation yield massive and

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rapid changes in employment. The section on constructivist perspectives makes few references to machine-human interaction, the role of local history and context in technological development, or the mutually constitutive relationship between technological and societal change. It would normally be unfair to criticize a book solely on what it omits. However, in the context of these well-established theories, the omission of core concepts such as identity, norms, and contingency is striking.

Ultimately, Ndzendze and Marwala convince readers that IR scholars must take AI seriously. Just as competition and balance-of-power politics have influenced scientific development and innovation, AI's diffusion will have significant impacts on the field's intellectual trajectory. The concluding chapter emphasizes that no single paradigm can comprehensively capture the entirety of AI's implications for war, trade, and international order, and thereby encourage inter-paradigmatic discussion, or 'analytical eclecticism'. This recommendation aligns with skepticism about the utility of stark divides for theory-building and testing, and as such provides scholars with a pragmatic way forward.

This book's most significant impact will be felt by scholars unfamiliar with the politics of AI or those embarking on new projects that may consider emerging technologies. It is not that it puts forth incorrect, misleading, or unsubstantiated arguments. Instead, its major shortcoming is that it leaves the reader looking for a more comprehensive and thorough analysis of its subject matter. Despite AI's wide-ranging applicability and relevance for world politics, this book only scratches the surface.

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