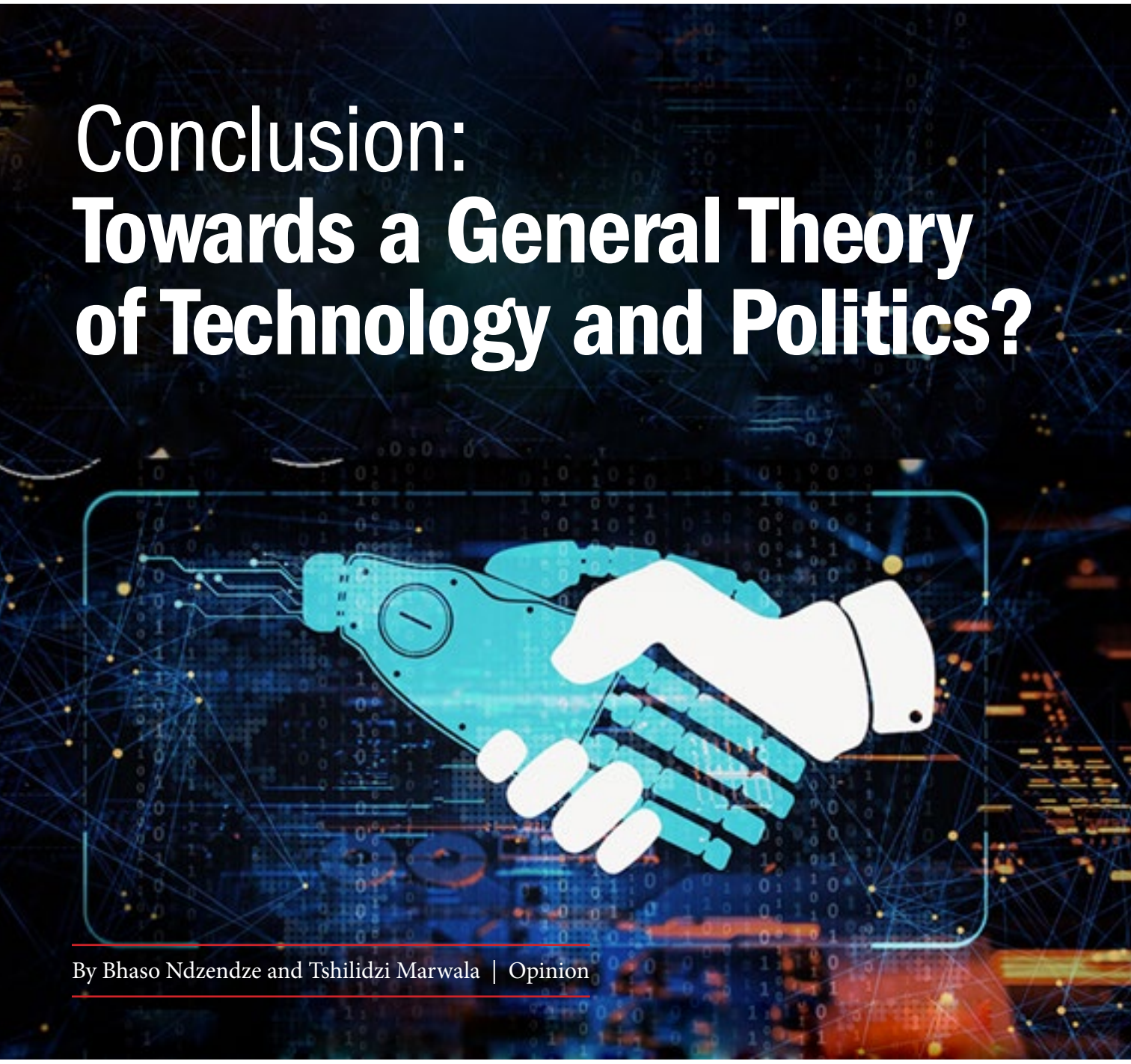
Conclusion: Towards a General Theory of Technology and Politics?



By Bhaso Ndzendze and Tshilidzi Marwala | Opinion

Abstract

This article reviews the insights made throughout this volume by the contributors and notes the myriad ways the articles have advanced our knowledge, on their own and in the aggregate. It also reviews the potential for further incorporating 4IR technologies into the political science methodological arsenal and making a case for theory-building inquiry on account of, and through, the emerging technologies as the next frontier in this expanding discipline.

It is nearly impossible to conclude a special issue such as the present volume; one which, as it itself acknowledges throughout, is studying a phenomenon at its relative dawn and whose implications are only at an early phase. Yet this special issue presents us with many critical observations that deserve reflection, stock-taking and emphasis before, as it were, we 'proceed' as a discipline. Robyn Williams, Lisa Otto and their contributors have weaved a timely contribution to the burgeoning literature, both scholarly and practical, of the 4IR technologies in political science and IR, with all their attendant sub-disciplines, with just as many questions raised as answers provided.

Well-executed, this volume begins with Africa's history of contributing meaningfully to past technological transformations on a major scale. Going beyond some of the by-now-familiar observations and sentiments which downplay the continent's agency – for example Inikori's (2002) brilliant work, but which nonetheless notes the mainly passive contribution through African slavery and minerals for England and the Americas – this work showcases how Africans were in many ways at the forefront in the story of human ingenuity, how that is still the case today and how this can be nurtured. One encouraging feature in the preceding number of years has been the liveliness of the debate, with many positing the notion of 'leaping' and others sceptical of how possible this is. Yet both the proponents and the sceptics have one feature in common: they want an Africa acting on the basis of agency, without reliance, as was the case for much of the preceding several decades, to mimic one model or another. Though still taking inspiration from many models – as the PC4IR report notes, starting relatively late can be an epistemic advantage – the emphasis has been on homegrown approaches and purposive engagement with the outside world that is rooted in African interests. Added to this, there is scope for reflective exercises on the 4IR approaches of other states, allowing for a more nuanced African approach. Far from being the preserve of major powers (though they do certainly have the edge), the 4IR is universal in its scope, if not in its benefits. Indeed, change is inevitable, and innovation has consequences, as Williams and Otto note in their introduction to this volume: 'Throughout history we have witnessed that technological trends have often impacted domestic politics and state relations.' Many of these impacts were the result of earlier years of foundational work, whose outcome could never have been known to their originators (e.g., the nuclear bomb for early 20th century theoretical physicists, which killed hundreds of thousands in Japan, and forever endowed IR thought and parlance with the concept of 'mutually assured destruction'). Africa is readier now more than at any previous point in its history to take a seat at the table, insist on optimal outcomes and to be an active mover and beneficiary of an industrial revolution. Current efforts to ensure that the African Continental Free Trade Agreement (AfCFTA) is 'digital-ready' as well as the AU's African Digital Transformation strategy are cognizant of this, and ensure full participation not just between countries, but also within countries. One of the threatening trends is unevenness – in uptake, regulatory mechanisms, and culturation. All these require harmonisation, yet distressingly the majority of countries on the continent do not have legislation on data, blockchain, and general guidelines on AI. Elsewhere we have also written about the opportunities in the realms of culture, heritage, language and psychology (Marwala, 2020; Ndzendze and Marwala, 2021; Ndzendze and Card, 2021).

Yet there is much that the continent can both benefit from and contribute to. From an ethical standpoint, African scholars, for example, have shaped guidelines on drone warfare (Heyns, 2017: 46) and AI in healthcare (including one of the authors [Marwala]; see WHO, 2021). First and foremost, the 4IR is an ideational phenomenon. All policy and commercial activity emanates, and/or at leans gains some form of legitimacy, from how we understand society and actors within it – from the role of the government, to what merits taxation, to ideas about what is worth preserving, as well as notions of progress. Africa has as much of a role to play as any other region in this thinking through about the future (see for example JM Lamola's [2021] demonstration of the Eurocentric roots of dystopian expectations about AI and how these have found their way to Africa). This is the crucial importance of the social sciences; a point made material by this special issue.

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(using the troubled Iran-US relationship) and the impact of 4IR technologies on the mining sector, and public service delivery. They thus traverse the various levels of the political experience from the local to the national, and the international. These are matters which should have our collective and simultaneous focus as we enter into the 4IR, which, unlike previous industrial-scale changes, happens at a time of much political openness (though that too is on the decline, thanks in part to the rise of these technologies [Kaiser, 2019]).

Williams and Otto rightly observe that academic work on the intersection between 4IR and political processes, whether domestic or global in scope, is nascent and growing. Further studies are invited. There is much to be done. Some of this work begins with synthesising many of the elements touched on in the preceding articles and the literatures they touched on. These are vast, and hint at the magnitude of the task ahead for the scholarship. This includes synthesising domestic and foreign audiences, economic growth, innovation policy, and security thinking. A conscious theorisation, perhaps ambitiously driving towards constructing a general theory or typological theory (i.e., the emergence of only a handful of theories with various 'turfs') of technology and politics, is possible however far ahead it is from being achieved. The latter is more likely out of the two, as scholarship in political science and IR tends to operate in paradigms operating from different axioms and ideas about what objects or entities merit study.

It is true that political science begins in critique and is founded on dissent, but the tools for such theory-building perhaps exist in this realm (i.e., the technology-politics nexus) than on any other question. Indeed, it is true that what constitutes political science and international relations is not so clear-cut and that these are shorthand for a dozen sub-disciplines, including comparative politics and public policy (or government) studies on the one hand, and international political economy, foreign policy analysis, and security studies on the other. This is not to mention the various other terrains in which political scientists encounter scholars from other worlds, including sociology, economics and law, demography and migration studies, development studies, and international law. Our own anticipation, put forth in our upcoming book Artificial Intelligence and International Relations Theories (2022), is that the field will first experience a further splinter (including splinters within theoretical paradigms) before coalescing towards a common set of assumptions and broad conclusions on key issues. But there is much ground to be broken from the methodological standpoint. Politics and IR scholarship can embrace the 4IR technologies, if not the concept of the 4IR itself (about which there remains some much-needed hesitancy and critique [1]). Whatever name we give the phenomenon, it is undeniable that seismic changes are taking place and changing patterns of manufacturing, consuming, destroying, combatting, and other integral components of the human experience and international interaction. For political science, the opportunities lie in the areas of deep learning, natural language processing, and Big Data. This includes their incorporation into research design and analysis, for which there is some track record through the digital humanities (DH), though this has had a very modest uptake in political science. There is much on offer, from both a qualitative and quantitative approach.

NLP, for example, can be utilised for the benefit of discourse or thematic analysis at a mega scale. On the other hand, Big Data can yield insights. This goes not only for contemporary or future events, but also for the past. Indeed, the latter is the mainstay and may be termed the 'source code' of political science and IR theorisation. It is from here that case studies are drawn, and it is history which stands as a common reference point. Indeed, the field understands its proto-origins

as being marked by the text of Thucydides' History of the Peloponnesian War in which the Athenian general/historian, admirably, sought to tell the events of the conflict as they were (despite his being on the losing side) and deduce general patterns from them. Developments in historical studies, for example, have seen AI being used to unlock previously unreachable or obscure details about the past. For example, Yannis Assael, a DeepMind research scientist, in 2019 published a paper in collaboration with Oxford University historian Thea Sommerschield on a deep learning model called 'Pythia,' which they designed to 'fill in the gaps' currently missing from ancient Greek inscriptions (see Ndzendze and Marwala, 2022: 11). These developments, in addition to perhaps removing linguistic barriers and expanding collaboration horizons in research, will have a considerable impact on how we think about periods we had largely deemed 'closed'. The gaps that existed will be largely accessible and known.

With the change in the source code, there is bound to be corresponding change in the conclusions reached. What are the hypothetical implications of new discoveries affecting our fundamental understanding of the Peloponnesian War, Ancient Rome, the Sanghor Empire, the British and Dutch East India trading companies, and colonial outposts, for instance, on theory? Would the fundamentals be rethought? Is there a mechanism for doing so in a field-encompassing manner, rather than within its theoretic silos? There is some promise of this, most notably through the methodological pluralism and theoretical dialogue encouraged by Bennett (e.g., 2013) and many others in addition to the growing use of mixed methods research in the fields' most prominent periodicals and conferences [2]. This has the necessary corollary of new forms of education with the goal of training political science and IR scholars in the various fields, along with interdisciplinary collaboration. Williams, Otto and their contributors have contributed immensely to this trajectory.

Notes

[1] This concern partially arises out of the corporate interests undergirding the narrative and is justified not only because of present-day 'big tech' commercially exploiting data insights to exacerbate consumerism (though this too is important), but also for historical reasons. IBM, for example, has an uncomfortable history of contracts with Nazi Germany to use its cutting-edge data-sorting technology to systematize its campaign of Jewish extermination (Black, 2012).

[2] Our review of papers using either method in leading (high impact factor) IR journals (European Journal of International Relations, International Affairs, International Organization, Journal of East Asian Security and International Affairs, Journal of International Relations and Development, and the South African Journal of International Affairs) in recent years, for example, found that there is a greater prevalence of qualitative methods over quantitative ones, and all of these having mixed methods as their second-most common research design (Ndzendze and Marwala, 2022: 37–38).

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