

Impact of Technology on Interstate Relations Context of International Relation Theories

Shaheen Idrees*, Fatima Agha Shah†

Abstract

Security is the first and foremost human requirement. Human society is centered around selfishness, solitary, self-interest, constant fear and brutality. Human nature is naturally selfish and the fear of being insecure continues until the death. To acquire safety, human beings accumulate power, lust for power and dominance are major characteristics of human nature. Through technological prowess and superior military technology Europe overpowered the Asian, American, Australian and African continents using their precious material and human resource for their development and growth. The late nineties of the previous century saw a surge in global connectivity through internet and today we cannot think of a life without being connected. Computing is taking a revolutionary turn by taking over the decision skills of human beings using Artificial Intelligence. Societies, nations and states are now to survive in machine driven and machine led environment. The early human history described quest for power as the central pillar for human interaction, self-interest is the paramount which later translated into the national interest being the central strand, morality and humanity has very importance in the sphere of politics. Ironically before the creation of modern state system the entire human societal evolution exhibited strong connections to the theory of realism. However, human beings have also learnt advantages of collective prosperity through this evolution process. The concept of cooperative society for lasting peace, however, could only be realized after the deadliest wars, particularly in Europe in the form of European Union. The existing theories of international relations and view of political scientists address some of the modern developments, but evolution of theories is also a process like the process of technical development. It is envisaged that technical development and interstate relations are two intertwined phenomena, change in one is ultimately going to induce the change in the other. The change in political behavior of the states may be explained through existing theories but with the rapid pace of technology newer shades of political theories will ultimately evolve. Change is only constant today and future looks no different, this change is ultimately going to induce change in political intelligence and understanding.

*PhD Scholar Greenwich University Karachi, Air Commodore (Retd), Director Campus, Air University Karachi Campus, Email: dir.campus@khi.au.edu.pk

†PhD, Associate Professor, Director, Office of the Graduate Studies Greenwich University Karachi, drfatimaagha@greenwich.edu.pk

Keywords: Contemporary Tech advancements, Geopolitical Rivalries, Cyberspace and Autonomous Systems, E-Platforms, Economic Transformation

Introduction

Security is the primary human requirement[‡]. Human society is centered around selfishness, solitary, self-interest, constant fear and brutality. Human nature is naturally selfish and the fear of being insecure continues until the death[§]. To acquire safety, human beings accumulate power, lust for power and dominance are major characteristics of human nature^{**}. Power competition amongst human beings leads to fear of being insecure and in response humans try to acquire more power^{††}. This cycle of power and insecurity has been the part of human history, the very basis of human interaction and foundations of relationship between collective human entities. The evolution of human societies from hamlets to tribes, to cities to empires and nation states have been exposed to the phenomenon of power and security. The endeavors of a cooperative society were continued along this evolution to secure peace^{‡‡}. These efforts were met with partial success however; the lasting peace could not be achieved. Throughout societal evolution conflict and war have been the dominating characteristics of human behavior^{§§}.

The earliest human civilizations started alongside the water flowing bodies, primarily to secure natural resources for living as well as irrigation^{***}. The Egyptian civilization settled alongside river Nile, the Indus valley civilization alongside Indus River, the Mesopotamian and Sumerian alongside river Tigris and Chinese alongside Yellow

[‡] Bertie G. Ramcharan, *Human Rights and Human Security* (BRILL, 2021).

[§] Robert Kastenbaum and Christopher M. Moreman, *Death, Society, and Human Experience*, 13th ed. (Routledge, 2024), <https://doi.org/10.4324/9781003182122>.

^{**} Alexandra Chadwick, "Hobbes and Hume on Human Nature," in *A Companion to Hobbes* (John Wiley & Sons, Ltd, 2021), <https://doi.org/10.1002/9781119635079.ch28>.

^{††} Enrico Fels, "Prospects of Great Power Rivalry: Escaping the Tragedy?," in *Routledge Handbook of the Future of Warfare* (Routledge, 2023).

^{‡‡} Wakena Ofkela Etefa et al., "The Promise of Cooperative Unions for Peace and Development: Afran Qalloo Cooperatives in Focus," *Journal of Peacebuilding & Development* 20, no. 3 (2025): 346–61, <https://doi.org/10.1177/15423166251349604>.

^{§§} John Tooby and Leda Cosmides, "The Evolution of War and Its Cognitive Foundations," *Evolution and Human Behavior* 46, no. 3 (2025): 106687, <https://doi.org/10.1016/j.evolhumbehav.2025.106687>.

^{***} "Water, Culture, Civilization, and History," in *Economical, Political, and Social Issues in Water Resources* (Elsevier, 2021), <https://doi.org/10.1016/B978-0-323-90567-1.00010-3>.

River^{†††}. All these early civilizations had unique characteristics, the archaeologists have found defence and security at the very heart of these civilizations^{†††}. A robust mechanism of security early warning and response was available with all early civilizations. Similarly, these inhabitants of these civilizations interacted with other nearby populations for the purpose of exchange of good and trade^{§§§}. Cooperation was achieved through trade and land routes remained a primary source of trading, centered at goods exchange. However, security of trading routes and goods remained a priority. Easy access to water resources and fertile land remained a priority. These civilizations developed security equipment as per their specific requirements and the technology available to them at that time^{****}. Similarly, the exchange of goods and trading were also steered as per needs ensuring that interests of permanent inhabitants are not compromised.

The interaction of civilizations and societies increased manifold once human beings learnt to sail^{††††}. The quests for new lands and free resources galvanized the spirit of competition and sense of security got stimulated. Different human societies and civilization through sail explored new lands and invaded the indigenous inhabitant through superiority of their resources and military equipment^{††††}. Navy in its true sense both offensive and defensive was crystallized. Old Greek history has many famous invasions based on superior navy, the famous wars of Troy and Peloponnesian are the classics of this human evolution and inter society interaction^{§§§§}. This interaction experienced both power as well as trade and cooperation. But primarily power maximization and occupation of resources remained at the core of this

^{†††} Jianxiong Ge and Yunsheng Hu, "The Yellow River Civilization and Other River Civilizations of the World," in *A Historical Survey of the Yellow River and the River Civilizations*, ed. Jianxiong Ge and Yunsheng Hu (Springer, 2021), https://doi.org/10.1007/978-981-33-4481-5_3.

^{††††} Chris Scarre and Charles Golden, *Ancient Civilizations*, 5th ed. (Routledge, 2021), <https://doi.org/10.4324/9780429401008>.

^{§§§} Barry Cunliffe, *Greeks, Romans and Barbarians: Spheres of Interaction* (Routledge, 2024), <https://doi.org/10.4324/9781003482819>.

^{****} Ernesto Dal Bó et al., "The Paradox of Civilization: Preinstitutional Sources of Security and Prosperity," *American Political Science Review* 116, no. 1 (2022): 213–30, <https://doi.org/10.1017/S000305542100071X>.

^{††††} Lewis Henry Morgan, *Ancient Society: Or, Researches in the Lines of Human Progress from Savagery, through Barbarism to Civilization* (DigiCat, 2022).

^{††††} Stephen J. Pyne, *The Great Ages of Discovery: How Western Civilization Learned About a Wider World* (University of Arizona Press, 2021).

^{§§§§} Manousos E. Kambouris, *The Trojan War as Military History* (Pen and Sword Military, 2023).

invention. Societies grew into large empires and grand cities and displayed unmatched human skills of that age.

1648 marks a unique watershed event in the evolution of human societies^{****}. European societies which were scattered and engulfed into territorial and religious conflicts joined hands for a lasting peace in the continent of Europe through treaty of Westphalia⁺⁺⁺⁺. The present-day interstate relations are working under the framework originating as the outcome of this treaty. The concept of a state was defined with acceptance of European identities. Religion was separated from the political functions of the state and the concept more precisely as emancipation originated⁺⁺⁺⁺. The state became a secular entity with its four cornerstones of population, territory, governance and sovereignty^{§§§§}. Europe after this treaty became a hub of inventions, the flurry of knowledge to the commoners through printing press created a collective societal growth for Europe. Industrial revolution led to a marvel growth of human societies^{*****}. The revolution generated demand for raw material and human resources which prompted European societies to explore other societies and regions. Through technological prowess and superior military technology Europe overpowered the Asian, American, Australian and African continents using their precious material and human resource for their development and growth⁺⁺⁺⁺⁺. The indigenous population of these continents was either transported as slaves to Europe and the America or became victim of European occupation⁺⁺⁺⁺⁺.

**** Jeannie Whayne, *The Oxford Handbook of Agricultural History* (Oxford University Press, 2023).

++++ Stella Ghervas, *Conquering Peace: From the Enlightenment to the European Union* (Harvard University Press, 2021).

++++ Saul Newman, "Political Theology and Religious Pluralism: Rethinking Liberalism in Times of Post-Secular Emancipation," *European Journal of Social Theory* 24, no. 2 (2021): 177–94, <https://doi.org/10.1177/1368431020968673>.

§§§§ Lucie Kadlecová, *Cyber Sovereignty: The Future of Governance in Cyberspace* (Stanford University Press, 2024).

***** Peter P. Groumpos, "A Critical Historical and Scientific Overview of All Industrial Revolutions," *IFAC-PapersOnLine*, 20th IFAC Conference on Technology, Culture, and International Stability TECIS 2021, vol. 54, no. 13 (2021): 464–71, <https://doi.org/10.1016/j.ifacol.2021.10.492>.

+++++ Hal Brands, *The Eurasian Century: Hot Wars, Cold Wars, and the Making of the Modern World* (W. W. Norton & Company, 2025).

+++++ Harry Johnston, *A History Of The Colonization Of Africa By Alien Races: Restored Classics to Go Edition* (Otbebookpublishing, 2025).

The start of 20th century witnessed one of the most remarkable inventions of human history which changed the way human societies interact. The Wrights Brothers' invention of the Air Machine added the use of third dimension into human mobility^{§§§§§§}. Rapid pace of aircraft and travel beyond boundaries on ground quickly altered the civilization pattern^{*****}. Soon the European nations fought for supremacy, and this led to two great wars where every invention was used for destruction of human societies and infrastructure. The epic being the use of nuclear technology to instantly bring centuries old towns, civilizations and cities into ashes^{††††††}. After the second World War, the European colonies gained independence and new states were formulated with boundaries drawn by the colonial masters. The victors of the war, the US and USSR, became the world leaders with a new race for world supremacy. Both nations invested heavily into research and the world witnessed another supreme achievement with human beings crossing the boundaries of this planet and landing on moon^{††††††}. The late nineties of the previous century saw a surge in global connectivity through internet and today we cannot think of a life without being connected^{§§§§§§}. Computing is taking a revolutionary turn by taking over the decision skills of human beings using Artificial Intelligence (AI). Societies, nations and states are now to survive in machine driven and machine led environment^{*****}. Although the regional organizations provided the platform to nations-state for cooperation and collective adaptation but different regions have different approaches and technological prowess leading to inter-regional and intra-regional disharmony.

§§§§§§ Ahmed F. El-Sayed, *History and Evolution of Aircraft: Technological Advancements in Size, Speed, Armaments, and Engines* (CRC Press, 2024), <https://doi.org/10.1201/9781003450115>.

***** Leilei Wang et al., "A Review of Urban Air Mobility-Enabled Intelligent Transportation Systems: Mechanisms, Applications and Challenges," *Journal of Systems Architecture* 141 (August 2023): 102902, <https://doi.org/10.1016/j.sysarc.2023.102902>.

†††††† Robert U. Ayres, *The History and Future of Technology: Can Technology Save Humanity from Extinction?* (Springer Nature, 2021).

†††††† Paolo Guardabasso et al., "Lunar Landing Necessary Building Blocks and Good Practices for a Sustainable Development of Human Lunar Activities," *Acta Astronautica* 202 (January 2023): 782–90, <https://doi.org/10.1016/j.actaastro.2022.10.025>.

§§§§§§ Vinay Sharma, "Lost Connections in an Interconnected World," in *Interconnected World, Lost Connections* (Routledge, 2025).

***** Peter Dauvergne, "The Globalization of Artificial Intelligence: Consequences for the Politics of Environmentalism," *Globalizations* 18, no. 2 (2021): 285–99, <https://doi.org/10.1080/14747731.2020.1785670>.

Theoretical Underpinnings

Throughout human history mankind prioritized security and survival. The strands of realism were explicitly observed in the epic written by Thucydides “The History of Peloponnesian War”^{††††††††}. The early human history described quest for power as the central pillar for human interaction, self-interest is the paramount which later translated into the national interest being the central strand, morality and humanity has very importance in the sphere of politics. Ironically, before the creation of modern state system the entire human societal evolution exhibited strong connections to the theory of realism^{††††††††}. However, human beings have also learnt advantages of collective prosperity through this evolution process. The concept of cooperative society for lasting peace in the form of European Union, however, could only be realized after the deadliest wars in Europe. The propagation of individual rights, rule of democracy, concepts of free markets and limited role of governance over human and market the strands of liberalism have been realized in the cooperative model of the EU. The modern nation state structure also identifies social constructs, such as norms, identity and beliefs, in shaping state behavior and international interactions. European countries particularly exhibit the stands of constructivism^{§§§§§§§§}. Inventions and technology have only strengthened their identities, beliefs and norms rather they have added societal dimensions to these norms. The African and Asian nation states because of their distinct culture and religious aspects have gender divide and their governance pattern contrasts the European model^{*****}. Their behavior in interstate relations and response to technology is governed through critical theoretical models. Post colonial critical theory explains the behavior of Asian and African states through examining the complex relationships between colonizers and the colonized, emphasizing themes of identity, power, hybridity and resistance. Similarly, feminism explains the marginalization of women in Asian and African communities examining the patriarchal structures and intersectionality. Today human behavior and states’ quests need more elaborate explanations. Technology is at its peak and the basic human

^{††††††††} Ritambhara Malaviya, “Realism and Neorealism,” in *Decolonising International Relations* (Routledge, 2025).

^{††††††††} Justin Rosenberg, *The Empire of Civil Society: A Critique of the Realist Theory of International Relations* (Verso Books, 2024).

^{§§§§§§§§} Susan Park, “Constructivism,” in *International Organization and Global Governance*, 3rd ed. (Routledge, 2023).

^{*****} Masao Miyoshi, “A Borderless World?: From Colonialism to Transnationalism and the Decline of the Nation-State,” in *Postcolonialism* (Routledge, 2004).

skill of intelligence has been taken over by machines^{††††††††}. In the ensuing paragraphs contemporary interstate and inter society interaction shall be discussed through the lens of international theories.

Technology and Interstate Relations

Technology has transformed the way human beings, societies and nation states used to interact^{††††††††}. In the ensuing paragraphs the shades of impact of technology on interstate relations with linkages to international relation theories have been discussed.

Digital Diplomacy

The current advancements of technologies have profoundly impacted the international community and interstate relations. The life of human beings has been transformed into electronic living^{§§§§§§§§}. The connections with each other have become virtual using 5 G spectrum. The quantum computing and is expected to create a virtual interactive at highest possible speed and distances for transmission will become negligible. This living style has also impacted on the way nation state used to interact. Earlier diplomacy used to be a careful, calculated and meticulous process. The world leaders now interact through social media platforms and a new form of diplomacy in the form of digital diplomacy has emerged. This has both positive and negative impact. Positive through strong soft power projection and cordial personal relations of the state leadership and negative in the sense of instantaneous outcomes. The norms of conventional diplomacy have transformed from calculated to instantaneous response. This transformation has led to hasty decision making and at times nonconformance to the national policies. The game of narratives has made leadership characteristics more transformative and precalculated^{*****}. Even the coercive shades of diplomacy are on common social media platforms, impacting patience and established norms of interstate relations. The response to coercive digital diplomacy is matter of honor and prestige for nations leading to

^{††††††††} Alok Kumar Sahai and Namita Rath, "Artificial Intelligence and the 4th Industrial Revolution," in *Artificial Intelligence and Machine Learning in Business Management* (CRC Press, 2021).

^{††††††††} Dagm Alemayehu Tegegn, "The Role of Science and Technology in Reconstructing Human Social History: Effect of Technology Change on Society," *Cogent Social Sciences* 10, no. 1 (2024): 2356916, <https://doi.org/10.1080/23311886.2024.2356916>.

^{§§§§§§§§} Vural Özdemir et al., "Thanatechnology and the Living Dead: New Concepts in Digital Transformation and Human-Computer Interaction," *OMICS: A Journal of Integrative Biology* 25, no. 7 (2021): 401–7, <https://doi.org/10.1089/omi.2021.0100>.

^{*****} Özdemir et al., "Thanatechnology and the Living Dead."

inclination towards war of words impacting interstate relations. Diplomacy, conventionally a tool for peacemaking and solution to irritating conflicts amongst nations as a shade of liberalism has seen both positive and negative impacts of technology. The urgent response on social media platforms could prove favorable for peace and negotiation and at the same time it could jeopardize interstate harmony.

Transformation of Market and Emergence of New Tech Giants

Oil and manufacturing centric multinational companies have been at the center stage of world economy. However, the interconnect of the world through global internet services has shifted the market in favor of online data and services centric technical giants⁺⁺⁺⁺⁺. Companies like Alpha, Meta, Microsoft, Amazon, Nvidia and Apple own almost the entire technical market⁺⁺⁺⁺⁺. Their influence has overshadowed the traditional oil and manufacturing companies. The global internet and connectivity have created a new global common^{ssssssss}. The world could leverage this global common to create harmony and cooperative society. The concept of free society with access to all, common platforms and especially equal education through online platforms could eventually transform the conflicting opinions into more harmonious world. Liberalism, a shade of cooperative human behavior, could be realized through this newfound global common with equal opportunity and access. However, the world has witnessed a more selfish, power and state centric approach for this new global common. Countries with tech giants have limited access for other countries to technology centric online education^{*****}. Furthermore, these companies secretly collect data through online access and apps eventually replacing the old intelligence techniques. This data subsequently is utilized for coercive tactics against the nations and their leadership. A global common which could create a harmonious and cooperative human society is

⁺⁺⁺⁺⁺ Ovidiu Vermesan and Joël Bacquet, *Cognitive Hyperconnected Digital Transformation: Internet of Things Intelligence Evolution* (CRC Press, 2022).

⁺⁺⁺⁺⁺ Matt Britton, *Generation AI: Why Generation Alpha and the Age Of AI Will Change Everything* (John Wiley & Sons, 2025).

^{ssssssss} Ovidiu Vermesan et al., "Internet of Things Strategic Research Roadmap," in *Internet of Things - Global Technological and Societal Trends from Smart Environments and Spaces to Green Ict* (River Publishers, 2011).

^{*****} Bukola Fatureti, "Online Learning during COVID19 and beyond: A Human Right Based Approach to Internet Access in Africa," *International Review of Law, Computers & Technology* 36, no. 1 (2022): 68–90, <https://doi.org/10.1080/13600869.2022.2030027>.

eventually used for power maximization and policy objectives a shade of realism.

Intensification of Geopolitical Rivalries

Emerging technologies have intensified geopolitical conflicts^{††††††††††}. China a global manufacturing leader is gaining headway in the new technologies especially in fields of transmission and computing. The West accuses China of getting into global technical firms through computing access and steal vital information for copying the emerging technologies. The gradual rise of China is one of the reasons, the Western origin tech giants have stopped Chinese access to open platforms, an accusation of intellectual theft^{††††††††††}. Chinese companies in the technical domain has caused fear for the US. Resultantly the US has imposed restrictions on some of the Chinese technical giants like Huawei and Xiaomi^{§§§§§§§§§§}. US also accuses China of investing heavily in military technology to outmatch the traditional military prowess of the West. The technical rivalry is likely to increase and access to market for tech centric goods is going to be the next challenge as China focuses on production and manufacturing. Both West and the China are on the conflicting terms at the computing and emerging technology access^{*****}. The rivalry is going to intensify as the machine centric and machine led products are extensively desired by the common users in the market. This new battleground is going to become the next global flashpoint. Capturing of market for artificial intelligence-based products and autonomous systems is a race between the US and China. The transformation of traditional hard power for maximization of influence to exertion of influence technological centric data exchangeable products is the new face of realism. Traditional battlegrounds and quests for influence through hard power have been reshaped through a

†††††††††† Srinivasan Gopal Chari, "Power, Pixels, and Politics: The Geopolitics of Emerging Technologies in the Digital Age," *London Journal of Research In Humanities and Social Sciences* 25, no. 2 (2025): 1–99, <https://journalspress.uk/index.php/LJRHSS/article/view/1273>.

†††††††††† Victor Menaldo and Nicolas Wittstock, "Does Technology Transfer from the US to China Harm American Firms, Workers, and Consumers? A Historical and Analytic Investigation," *Economic and Political Studies* 9, no. 4 (2021): 417–46, <https://doi.org/10.1080/20954816.2021.1933768>.

§§§§§§§§§§ Brydn Abraham, *Foreign Giants Under Fire: Strategic Responses of Chinese Telecom Firms Navigating U.S. Regulatory and Political Hostility*, April 2025, <https://hdl.handle.net/2152/133233>.

***** Jun Zhang, "Hardening National Boundaries in a Globally-Connected World: Technology, Development and Nationalism in China," *Journal of Contemporary Asia* 52, no. 5 (2022): 783–804, <https://doi.org/10.1080/00472336.2021.2001841>.

machine controlled and machine led environment. This new facet is dangerous for the security of the world as miscalculations may lead to catastrophic consequences. Technology is explicitly carving new grounds for conflicts, a manifestation of realism.

Cyber Security

Global internet is virtually connected to everything. This connection has facilitated the world creating a unified single cooperative society on one side; however, it has also put every information resource at risk⁺⁺⁺⁺⁺. The hacker through their skills reach to sensitive information centric nodes of the nation states and attack critical information infrastructure. Omni presence of the global internet has enabled this threat to be omni present as well. The evolution of internet of things and autonomous systems has added benefits and ease to human life, but it has also created certain existential threats. Most of the electric, energy, gas and oil infrastructures in the contemporary world operate through cyber critical nodes⁺⁺⁺⁺. These critical operations can be halted or disrupted through hacking. Similarly, in modern world transportation systems are also connected to internet, change of tracks for the trains and wrong information to air traffic could lead to catastrophic consequences. To avoid this national and global robust cyber security network is essential. Some cooperative initiatives in the form of “Five Eyes” later “Nine Eyes” were taken but formal global engagement in this context is inadequate. Currently various countries have initiated cyber security policies, and they have also linked cyber security to their respective national security policies. Like a traditional security threat, cyber security is also a potent threat, breach of which can lead to national security consequences⁺⁺⁺⁺. It has a human as well as material cost. Traditional securitization theory could include cyber threats. A global mechanism could be instituted through securitization model to safeguard the cyber critical national and international infrastructure.

⁺⁺⁺⁺ Douglas W. Hubbard and Richard Seiersen, *How to Measure Anything in Cybersecurity Risk* (John Wiley & Sons, 2023).

⁺⁺⁺⁺ Eric D. Knapp, *Industrial Network Security: Securing Critical Infrastructure Networks for Smart Grid, SCADA, and Other Industrial Control Systems* (Elsevier, 2024).

⁺⁺⁺⁺ Wasyihun Sema Admass et al., “Cyber Security: State of the Art, Challenges and Future Directions,” *Cyber Security and Applications* 2 (January 2024): 100031, <https://doi.org/10.1016/j.csa.2023.100031>.

Lack of Regulatory Mechanisms and Mistrust

Second world war ended with the largest human catastrophe^{*****}. Control over nuclear technology was the next big challenge the world faced. However, two parallel blocks Capitalists and Socialists despite their ideological differences exhibited willingness to control the proliferation of nuclear technology^{††††††††††}. Currently in this technology centric world the leading tech giant companies and the nation states have created an environment of mistrust, consequently the regulatory mechanism for the contemporary technologies of cyberspace, autonomous systems and artificial intelligence have not been materialized. The role of UN and other regional organizations is diminishing in the exercise of control over misuse of technological advancement. The pace of technology is extremely rapid, the dream of 6G transmission and quantum computing has already been realized but global consensus on regulatory mechanism is nonexistent^{††††††††††}. The acts of war which were clearly defined and well understood by nation states have become blurred due to availability of autonomous systems, omni presence of cyber domain and non-attributability in these spheres^{§§§§§§§§§§}. The powerful states use autonomous drones on the pretext of preemption against terrorism and target the weak nations with impunity. Lack of regulatory mechanisms in digital space and artificial intelligence can increase mistrust and the security of the world may be impinged. The realist perspective of self interest and state security may prevail in this scenario, however if a joint workable framework could be realized it could create a harmonious cooperative society in these domains “a strong strand of liberalism”.

Impact on Developing Countries and Digital Divide

The unprecedented pace of technology has particularly affected the developing nations^{*****}. Lack of supporting

***** Alex Callinicos, *The New Age of Catastrophe* (John Wiley & Sons, 2023).

†††††††††† Kjølv Egeland, “The Ideology of Nuclear Order,” *New Political Science* 43, no. 2 (2021): 208–30, <https://doi.org/10.1080/07393148.2021.1886772>.

†††††††††† Michal Naturski, “Compromise in Multilateral Negotiations and the Global Regulation of Artificial Intelligence,” *Democratization* 31, no. 5 (2024): 1091–116, <https://doi.org/10.1080/13510347.2024.2351583>.

§§§§§§§§§§ Miguel Alberto Gomez, “Overcoming Uncertainty in Cyberspace: Strategic Culture and Cognitive Schemas,” *Defence Studies* 21, no. 1 (2021): 25–46, <https://doi.org/10.1080/14702436.2020.1851603>.

***** Raphael Kaplinsky and Erika Kraemer-Mbula, “Innovation and Uneven Development: The Challenge for Low- and Middle-Income

infrastructure, inadequacy of resources, poor education systems and mal governance has increased the divide between the developed and developing⁺⁺⁺⁺⁺. Ironically, intellectuals and experts from the global South have migrated to the technologically superior West leading to brain drain in their respective regions and states. Preservation of values of global South and their indigenous customs face a serious threat. Owing to the omni access of information due to ever presence of social media platforms the indigenous culture and identity of these nation states is in quagmire. Constructivism and post-colonial critical theory explain the lack of participation by these nations in international systems. The participation is likely to decline further, and identity is going to weaken under strong soft power influence of the great powers. Individualism owing to social media access has affected the traditional collective harmonies societies of these nations. The dissatisfaction of the population has been capitalized by the powerful nations to create a divide within these nations and impose parallel governing structures in the relatively poor area⁺⁺⁺⁺⁺. These parallel structures use violence for their demands, putting strain on already fragile economy. Most of Asian and African countries have these organizations which are declared terrorist groups but receive support from the powerful masters at the same time. Another critical aspect of developing nations is lack of participation of women in state and daily affairs. This deficiency exists owing to the cultural bounds and lack of education. Feminism addresses these aspects adequately. The West utilizes international forms and human rights organs to malign this aspect of developing nations. Access to education used to be considered a right for everyone, however this too has been politicized under the influence of technology. Tech giants do not display correct and sensitive information in the developing countries⁺⁺⁺⁺⁺. The travel bans and grant of study visa has also been restricted for the developing nation, of late the US not only cancelled the study visa but also imposed the travel ban on many nations. State centric approach with power maximization and retention

Economies,” *Research Policy* 51, no. 2 (2022): 104394, <https://doi.org/10.1016/j.respol.2021.104394>.

⁺⁺⁺⁺⁺ Xavier Fernández-I-Marín et al., “Bureaucratic Quality and the Gap between Implementation Burden and Administrative Capacities,” *American Political Science Review* 118, no. 3 (2024): 1240–60, <https://doi.org/10.1017/S0003055423001090>.

⁺⁺⁺⁺⁺ Pranab Bardhan, *A World of Insecurity: Democratic Disenchantment in Rich and Poor Countries* (Harvard University Press, 2022).

⁺⁺⁺⁺⁺ Wenda Li et al., “Tech Giants’ Responsible Innovation and Technology Strategy: An International Policy Review,” *Smart Cities* 6, no. 6 (2023): 3454–92, <https://doi.org/10.3390/smartcities6060153>.

The Dialogue 52 Volume 21 Issue 2 April-June 2026

of hegemonic position the facets of realism are eminent in this scenario.

Battle of Narratives and Policy Objectives

Technology has impacted the interstate relations in the battle of narratives as well. Previously the print and electronic media used to shape the environment for any country and event. The public reach of print and electronic media was limited, and it had robust regulatory mechanisms as well. Technology has transformed media outreach, and social media platforms virtually connect with every individual on this planet. Now the social media platforms shape the environment for any event as well as country. The soft power projection through social media platforms is new gold *****. The popularist narratives are created and propagated on social media platforms and the views and followers decide the outcome of an event. Most interesting facet of this technological advancement is the use of artificial intelligence to regeneration and propagation of fake narratives, marking a start of post truth era ++++++. Both developed and developing countries are affected from the battle of narratives. The election campaigns are run through social media platforms which can be hacked and controlled by the tech giants to install government facilitating the policy objectives. The electronic regime changes experienced by Tunis, Egypt and many Arab countries marked an era of change through social media platform labelled as Arab Spring+++++. The monarchies in Middle East felt threatened by this new phenomenon and introduced social reforms. Even the US experienced interference by external factors in their campaign during the past three presidential elections. The regime change facet of realism for policy objectives is at play through advent of technology. Another very important facet of this technological advancement is creation of events and videos using AI platforms. Character assassination of important personalities, creation of social unrest through circulation of fake videos concerning religious and ethnic content are the new tools undermining the national security instruments. Foreign elements invest in these circumstances to push legitimate government for achievement of policy objectives.

State and Corporate Control

***** Shama Bibi and Wajeeha Khan, "Role of Media in State Soft Power Projection," *Pakistan Research Journal of Social Sciences* 4, no. 1 (2025), <https://prjss.com/index.php/prjss/article/view/234>.

+++++ Bibi and Khan, "Role of Media in State Soft Power Projection."

+++++ Hanan Badr, "Before the 'Arab Spring': How Challengers Pushed Counter-Issues in Egypt's Hybrid Media System," *Media, War & Conflict* 14, no. 4 (2021): 522–41, <https://doi.org/10.1177/1750635219894611>.

The Dialogue 53 Volume 21 Issue 2 April-June 2026

Economic Transformation

The Dialogue **54** **Volume 21** **Issue 2** **April-June 2026**

Online Social Media Platforms. Social media platforms have created new opportunities and a cheap income resource for the youth. Online apps like YouTube, TikTok and many other disburse healthy amount to the content creators^{*****}. Youth can exploit this opportunity to earn easy money and invest on their education and future career development. Further, the YouTube and TikTok icons and celebrities are recognized worldwide due to global internet. They can act as soft power of a nation state and help conflict resolution through back soft power. The media regulation can bring this money into national tax net, and it can become a new sector for income for the government^{*****}. The global connection of these influences can create a harmonious society with soft power at front a shade of liberalism.

E-Learning. Education was traditionally a full-time activity with physical attendance of the classes and institutions. With contemporary technologies the distance has become immaterial, and any educational content can be accessed through social media platforms and online learning resources. This has not only lifted the age barriers for learning but also time management has become easier. Those who want to learn and engage in educational activities can manage their living, jobs and courses as per their own requirements. Further, reputable global institutions are within the reach of population of developing countries^{*****}. This global connectivity and learning platforms can be utilized to educate the frameworks of peace to the next generation promoting harmony and reducing conflict situations. The achievement of lasting peace under liberalism can be attained through online learning platforms.

E-Banking. Financial transactions traditionally have been very cumbersome, involving multiple channels for clearance and identity authentication. With contemporary technologies and the advent of E banking, electronic transactions are possible anywhere in the

^{*****} Chris Stokel-Walker, *TikTok Boom: China's Dynamite App and the Superpower Race for Social Media* (Sourcebooks + ORM, 2023).

^{*****} Roberta Carlini, *Chapter 12: Digital Taxation and Media Policy* (2021),

<https://www.elgaronline.com/edcollchap/edcoll/9781786439321/9781786439321.00019.xml>.

^{*****} Heidi Aly, "Digital Transformation, Development and Productivity in Developing Countries: Is Artificial Intelligence a Curse or a Blessing?," *Review of Economics and Political Science* 7, no. 4 (2020): 238–56, <https://doi.org/10.1108/REPS-11-2019-0145>.

E Advertisement and Media. Traditionally the movie making and advertisement used to be confined as specialist entity and only selected personalities used to venture into these fields. Contemporary

Saniya Mishra, “Online Shopping Dynamics Influencing Customer: Amazon Vs. Alibaba,” *Asia-Pacific Journal of Management Research and Innovation* 18, nos. 3–4 (2022): 145–51, <https://doi.org/10.1177/2319510X231151266>.

environment and technologies have transformed the entertainment media industry*****. The viewership which used to be dependent on physical purchase of the tickets is now possible through platforms like Netflix. Where purchase of any old and new content is possible through online subscription-based model. Further the personalities who run the advertisement campaign are now followership dependent. The more followers you have on online platforms more likely you are going to run a better advertisement campaign. The filmmaking companies are also cautious of this new trend and global viewership; hence they create those contents which are suited for the entire globe within cultural and social barriers. Since the viewership is subscription based hence contents as per the individual choice are available on online media platforms. This adds to flexibility and variety in selection of the contents. Global access to media can manifest liberalism for betterment of humanity and a conflict free world.

Theoretical Analysis

The technological ascendancy of the modern age has attracted political scientists to rationalize contemporary developments with respect to available theories. The postulates of classical realism rooted in selfish human nature, state centric approach, lack of morality in international politics and inevitability of politics are explanations of lack of regulatory mechanism for technical advancements††††††††††††††††††††. Lack of will, mistrust and quest for power with respect to innovation and emerging technologies are manifestations of **classical realism** in the present age. The intensification of geopolitical rivalries due technical advancements, the US-China strategic competition, Russian resurgence in emerging technologies and European autonomy are manifested in anarchy of international system, the security dilemma due competition and zero-sum phenomenon the key postulates **Neo Realism**. The impact of technical advancements on developing countries and their response to this phenomenon is manifested in **Neo Classic Realism**. The developing countries adopt systematic pressure and internal politics, their foreign policies are reflection of internal differences, and their responses are different to the contemporary environment. Battle of

***** Priya Shome et al., "Technological Transformation in Learning Patterns in Media and Entertainment," in *Artificial Intelligence Based Solutions for Industrial Applications* (CRC Press, 2024).

†††††††††††††††††††† Deepak Mawar, "Realpolitik in Global Governance: Understanding the Competing Realist and Cosmopolitan Narratives of the Nineteenth Century Era of International Law," *The International History Review* 47, no. 2 (2025): 211–29, <https://doi.org/10.1080/07075332.2024.2354870>.

The Dialogue 57 Volume 21 Issue 2 April-June 2026

narratives and shaping the political environment is deep rooted in **Offensive Realism** and the response from targeted state is manifestation of **Defensive Realism**. Where powerful seek power to maximize influence and control while the others seek security to survive in this environment. Creation of global internet and consequent to that the transformation of economic systems is manifestation of **Classical Liberalism**^{*****}. The precedence of individual right over governance, free market limited role of state in governing structures are reflected in modern transformed economy due to global internet. The regulatory mechanism adopted by the states and advent of new corporate structure is the manifestation of Modern Liberalism. The assurance of education, justice, opportunity and individual right by the state to stop infringement of technical giants in state sovereign authority is explained under Modern Liberalism. The cyber security and spread of cyberspace and state's effort to control yet failure is manifestation of Neo-Classical Liberalism. Despite controlling efforts by the state, the omni presence of cyberspace lacks structural control giving way to privatization, deregulation and creation of free markets, the core ideas of Neo-Classic Liberalism.

Conclusion

Modern technology has changed the way we live, since human beings made the hierarchical structure of nation-states for societal interaction, states have also been affected due to contemporary technological advancement. The states responses in interstate relations have transformed to erratic, rapid and non-policy conformant due to digital diplomacy. Twitter messages take precedence over calculated policy engagement narratives. The lead in digital world has intensified geopolitical rivalries. The battle for prominence and capture of digital space has intensified the global tech competition. China and US are in lock horns over emerging technologies. Battle of narratives have reshaped the definition of influence, exertion of soft power through social media platforms and creation of population rage and unrest is norm of the day for the powerful. Popular strategy of regime change has been rejuvenated through the tools of social media apps, creating clouds of false anti state narratives managed and controlled by the powerful. The response from the developing countries is bleak. With lack of infrastructure, inadequacies of regulatory mechanisms and educational inferiority have created a quagmire for developing nations. Mostly they find themselves at the mercy of the powerful and under intense coercive pressure. Cyber domain with its omni presence and

^{*****} Edward D. Mansfield and Nita Rudra, "Embedded Liberalism in the Digital Era," *International Organization* 75, no. 2 (2021): 558–85, <https://doi.org/10.1017/S0020818320000569>.

autonomous systems with their long ranges and onboard intelligence systems have leveraged the powerful nations to exercise policy objective with impunity. Lack of attributability and impunity from detection has leveraged the powerful nations those necessary tools which enhance their policy objectives and influence sphere. The transformation of economic landscape due to emergence of modern technologies and advent of E education, E banking, Ecommerce, digital currency, E businesses and E advertisement has been cautiously observed by the developing countries. Their adaptation to these new systems remains cautious as they view this transformation as a modern tool to undermine the state's sovereignty. If implanted with equality and sincerity the modern economic transformation could realize the dream of a one cooperative society with equal opportunity to all nation states. However, the powerful states maintain their monopoly over these systems and undermine the participation of developing countries in this transformation. Powerful states have created giant E-platforms capturing the wider landscape of this transformation and since the developing countries do not own any of the digital platforms their access to futuristic growth through these systems remains a question. The existing theories of international relations and view of political scientists address some of the modern developments, but it is a process like the process of technical development. It is envisaged that technical development and interstate relations are two intertwined phenomena, change in one is ultimately going to induce the change in the other. The change in political behavior of the states may be explained through existing theories but with the rapid pace of technology newer shades of political theories will ultimately evolve thus necessitating new theories centered at technology. Change is only constant today and future looks no different, this change is ultimately going to induce change in political intelligence and understanding.

References

- Abraham, Brydn. *Foreign Giants Under Fire: Strategic Responses of Chinese Telecom Firms Navigating U.S. Regulatory and Political Hostility*. April 2025. <https://hdl.handle.net/2152/133233>.
- Admass, Wasyihun Sema, Yirga Yayeh Munaye, and Abebe Abeshu Diro. "Cyber Security: State of the Art, Challenges and Future Directions." *Cyber Security and Applications* 2 (January 2024): 100031. <https://doi.org/10.1016/j.csa.2023.100031>.
- Alemayehu Tegegn, Dagm. "The Role of Science and Technology in Reconstructing Human Social History: Effect of Technology Change on Society." *Cogent Social Sciences* 10, no. 1 (2024): 2356916. <https://doi.org/10.1080/23311886.2024.2356916>.

- Aly, Heidi. "Digital Transformation, Development and Productivity in Developing Countries: Is Artificial Intelligence a Curse or a Blessing?" *Review of Economics and Political Science* 7, no. 4 (2020): 238–56. <https://doi.org/10.1108/REPS-11-2019-0145>.
- Ayres, Robert U. *The History and Future of Technology: Can Technology Save Humanity from Extinction?* Springer Nature, 2021.
- Badr, Hanan. "Before the 'Arab Spring': How Challengers Pushed Counter-Issues in Egypt's Hybrid Media System." *Media, War & Conflict* 14, no. 4 (2021): 522–41. <https://doi.org/10.1177/1750635219894611>.
- Bardhan, Pranab. *A World of Insecurity: Democratic Disenchantment in Rich and Poor Countries*. Harvard University Press, 2022.
- Bibi, Shama, and Wajeeha Khan. "Role of Media in State Soft Power Projection." *Pakistan Research Journal of Social Sciences* 4, no. 1 (2025). <https://prjss.com/index.php/prjss/article/view/234>.
- Bó, Ernesto Dal, Pablo Hernández-Lagos, and Sebastián Mazzuca. "The Paradox of Civilization: Preinstitutional Sources of Security and Prosperity." *American Political Science Review* 116, no. 1 (2022): 213–30. <https://doi.org/10.1017/S000305542100071X>.
- Brands, Hal. *The Eurasian Century: Hot Wars, Cold Wars, and the Making of the Modern World*. W. W. Norton & Company, 2025.
- Britton, Matt. *Generation AI: Why Generation Alpha and the Age Of AI Will Change Everything*. John Wiley & Sons, 2025.
- Callinicos, Alex. *The New Age of Catastrophe*. John Wiley & Sons, 2023.
- Carlini, Roberta. *Chapter 12: Digital Taxation and Media Policy*. 2021. <https://www.elgaronline.com/edcollchap/edcoll/9781786439321/9781786439321.00019.xml>.
- Cassese, A. *The Current Legal Regulation of the Use of Force*. Martinus Nijhoff Publishers, 2024.
- Chadwick, Alexandra. "Hobbes and Hume on Human Nature." In *A Companion to Hobbes*. John Wiley & Sons, Ltd, 2021. <https://doi.org/10.1002/9781119635079.ch28>.
- Chari, Srinivasan Gopal. "Power, Pixels, and Politics: The Geopolitics of Emerging Technologies in the Digital Age." *London Journal of Research In Humanities and Social Sciences* 25, no. 2 (2025): 1–99. <https://journalspress.uk/index.php/LJRHSS/article/view/1273>.

- Cunliffe, Barry. *Greeks, Romans and Barbarians: Spheres of Interaction*. Routledge, 2024.
<https://doi.org/10.4324/9781003482819>.
- Dauvergne, Peter. "The Globalization of Artificial Intelligence: Consequences for the Politics of Environmentalism." *Globalizations* 18, no. 2 (2021): 285–99.
<https://doi.org/10.1080/14747731.2020.1785670>.
- Egeland, Kjøl. "The Ideology of Nuclear Order." *New Political Science* 43, no. 2 (2021): 208–30.
<https://doi.org/10.1080/07393148.2021.1886772>.
- El-Sayed, Ahmed F. *History and Evolution of Aircraft: Technological Advancements in Size, Speed, Armaments, and Engines*. CRC Press, 2024. <https://doi.org/10.1201/9781003450115>.
- Etefa, Wakana Ofkela, Abebe Lemessa Saka, and Feyera Dinsa Hundessa. "The Promise of Cooperative Unions for Peace and Development: Afran Qalloo Cooperatives in Focus." *Journal of Peacebuilding & Development* 20, no. 3 (2025): 346–61.
<https://doi.org/10.1177/15423166251349604>.
- Faturoti, Bukola. "Online Learning during COVID19 and beyond: A Human Right Based Approach to Internet Access in Africa." *International Review of Law, Computers & Technology* 36, no. 1 (2022): 68–90.
<https://doi.org/10.1080/13600869.2022.2030027>.
- Fels, Enrico. "Prospects of Great Power Rivalry: Escaping the Tragedy?" In *Routledge Handbook of the Future of Warfare*. Routledge, 2023.
- Fernández-I-Marín, Xavier, Christoph Knill, Christina Steinbacher, and Yves Steinebach. "Bureaucratic Quality and the Gap between Implementation Burden and Administrative Capacities." *American Political Science Review* 118, no. 3 (2024): 1240–60.
<https://doi.org/10.1017/S0003055423001090>.
- Ge, Jianxiong, and Yunsheng Hu. "The Yellow River Civilization and Other River Civilizations of the World." In *A Historical Survey of the Yellow River and the River Civilizations*, edited by Jianxiong Ge and Yunsheng Hu. Springer, 2021.
https://doi.org/10.1007/978-981-33-4481-5_3.
- Ghervas, Stella. *Conquering Peace: From the Enlightenment to the European Union*. Harvard University Press, 2021.
- Gomez, Miguel Alberto. "Overcoming Uncertainty in Cyberspace: Strategic Culture and Cognitive Schemas." *Defence Studies* 21, no. 1 (2021): 25–46.
<https://doi.org/10.1080/14702436.2020.1851603>.
- Groumpos, Peter P. "A Critical Historical and Scientific Overview of All Industrial Revolutions." *IFAC-PapersOnLine*, 20th IFAC

- Conference on Technology, Culture, and International Stability TECIS 2021, vol. 54, no. 13 (2021): 464–71. <https://doi.org/10.1016/j.ifacol.2021.10.492>.
- Guardabasso, Paolo, Simone Paternostro, Pablo Bedialauneta, and Romain Fonteyne. “Lunar Landing Necessary Building Blocks and Good Practices for a Sustainable Development of Human Lunar Activities.” *Acta Astronautica* 202 (January 2023): 782–90. <https://doi.org/10.1016/j.actaastro.2022.10.025>.
- Hubbard, Douglas W., and Richard Seiersen. *How to Measure Anything in Cybersecurity Risk*. John Wiley & Sons, 2023.
- Johnston, Harry. *A History Of The Colonization Of Africa By Alien Races: Restored Classics to Go Edition*. Otbebookpublishing, 2025.
- Kadlecová, Lucie. *Cyber Sovereignty: The Future of Governance in Cyberspace*. Stanford University Press, 2024.
- Kambouris, Manousos E. *The Trojan War as Military History*. Pen and Sword Military, 2023.
- Kaplinsky, Raphael, and Erika Kraemer-Mbula. “Innovation and Uneven Development: The Challenge for Low- and Middle-Income Economies.” *Research Policy* 51, no. 2 (2022): 104394. <https://doi.org/10.1016/j.respol.2021.104394>.
- Kastenbaum, Robert, and Christopher M. Moreman. *Death, Society, and Human Experience*. 13th ed. Routledge, 2024. <https://doi.org/10.4324/9781003182122>.
- Knapp, Eric D. *Industrial Network Security: Securing Critical Infrastructure Networks for Smart Grid, SCADA, and Other Industrial Control Systems*. Elsevier, 2024.
- Krishnamoorthy, Anand, and Patrick Holladay. “An Analysis of Factors Influencing Organizational Structure in Two East Asian Nations.” *Journal of Transnational Management* 26, no. 4 (2021): 269–90. <https://doi.org/10.1080/15475778.2021.2009300>.
- Li, Wenda, Tan Yigitcanlar, Alireza Nili, and Will Browne. “Tech Giants’ Responsible Innovation and Technology Strategy: An International Policy Review.” *Smart Cities* 6, no. 6 (2023): 3454–92. <https://doi.org/10.3390/smartcities6060153>.
- Malaviya, Ritambhara. “Realism and Neorealism.” In *Decolonising International Relations*. Routledge, 2025.
- Mansfield, Edward D., and Nita Rudra. “Embedded Liberalism in the Digital Era.” *International Organization* 75, no. 2 (2021): 558–85. <https://doi.org/10.1017/S0020818320000569>.
- Mawar, Deepak. “Realpolitik in Global Governance: Understanding the Competing Realist and Cosmopolitan Narratives of the Nineteenth Century Era of International Law.” *The*

- International History Review* 47, no. 2 (2025): 211–29.
<https://doi.org/10.1080/07075332.2024.2354870>.
- Menaldo, Victor, and Nicolas Wittstock. “Does Technology Transfer from the US to China Harm American Firms, Workers, and Consumers? A Historical and Analytic Investigation.” *Economic and Political Studies* 9, no. 4 (2021): 417–46.
<https://doi.org/10.1080/20954816.2021.1933768>.
- Mishra, Saniya. “Online Shopping Dynamics Influencing Customer: Amazon Vs. Alibaba.” *Asia-Pacific Journal of Management Research and Innovation* 18, nos. 3–4 (2022): 145–51.
<https://doi.org/10.1177/2319510X231151266>.
- Miyoshi, Masao. “A Borderless World?: From Colonialism to Transnationalism and the Decline of the Nation-State.” In *Postcolonialism*. Routledge, 2004.
- Morgan, Lewis Henry. *Ancient Society: Or, Researches in the Lines of Human Progress from Savagery, through Barbarism to Civilization*. DigiCat, 2022.
- Natorski, Michal. “Compromise in Multilateral Negotiations and the Global Regulation of Artificial Intelligence.” *Democratization* 31, no. 5 (2024): 1091–116.
<https://doi.org/10.1080/13510347.2024.2351583>.
- Newman, Saul. “Political Theology and Religious Pluralism: Rethinking Liberalism in Times of Post-Secular Emancipation.” *European Journal of Social Theory* 24, no. 2 (2021): 177–94. <https://doi.org/10.1177/1368431020968673>.
- Nosova, Svetlana, Anna Norkina, Svetlana Makar, and Galina Fadeicheva. “Digital Transformation as a New Paradigm of Economic Policy.” *Procedia Computer Science*, 2020 Annual International Conference on Brain-Inspired Cognitive Architectures for Artificial Intelligence: Eleventh Annual Meeting of the BICA Society, vol. 190 (January 2021): 657–65. <https://doi.org/10.1016/j.procs.2021.06.077>.
- Özdemir, Vural, Simon Springer, Arif Yıldırım, et al. “Thanatechnology and the Living Dead: New Concepts in Digital Transformation and Human-Computer Interaction.” *OMICS: A Journal of Integrative Biology* 25, no. 7 (2021): 401–7. <https://doi.org/10.1089/omi.2021.0100>.
- Park, Susan. “Constructivism.” In *International Organization and Global Governance*, 3rd ed. Routledge, 2023.
- Pyne, Stephen J. *The Great Ages of Discovery: How Western Civilization Learned About a Wider World*. University of Arizona Press, 2021.
- Ramcharan, Bertie G. *Human Rights and Human Security*. BRILL, 2021.

- Rosenberg, Justin. *The Empire of Civil Society: A Critique of the Realist Theory of International Relations*. Verso Books, 2024.
- Sahai, Alok Kumar, and Namita Rath. "Artificial Intelligence and the 4th Industrial Revolution." In *Artificial Intelligence and Machine Learning in Business Management*. CRC Press, 2021.
- Scarre, Chris, and Charles Golden. *Ancient Civilizations*. 5th ed. Routledge, 2021. <https://doi.org/10.4324/9780429401008>.
- Sharma, Vinay. "Lost Connections in an Interconnected World." In *Interconnected World, Lost Connections*. Routledge, 2025.
- Shome, Priya, Sumedha Chaudhury, Sudhir Kumar, and Sumit Kumar Rohit. "Technological Transformation in Learning Patterns in Media and Entertainment." In *Artificial Intelligence Based Solutions for Industrial Applications*. CRC Press, 2024.
- Singh, Ajay Pratap, Manish Tyagi, Gauri Vasistha, et al. "Social Media Application Development." In *Applications of Artificial Intelligence in 5G and Internet of Things*. CRC Press, 2025.
- Stokel-Walker, Chris. *TikTok Boom: China's Dynamite App and the Superpower Race for Social Media*. Sourcebooks + ORM, 2023.
- Tooby, John, and Leda Cosmides. "The Evolution of War and Its Cognitive Foundations." *Evolution and Human Behavior* 46, no. 3 (2025): 106687. <https://doi.org/10.1016/j.evolhumbehav.2025.106687>.
- Trivedi, Shrawan Kumar, Sriranga Vishnu, Amrinder Singh, and Mohit Yadav. "Research Trends in Sustainable E-Payment Systems: A Study Using Topic Modeling Approach." *IEEE Transactions on Engineering Management* 71 (2024): 7511–25. <https://doi.org/10.1109/TEM.2023.3280216>.
- Vermesan, Ovidiu, and Joël Bacquet. *Cognitive Hyperconnected Digital Transformation: Internet of Things Intelligence Evolution*. CRC Press, 2022.
- Vermesan, Ovidiu, Peter Friess, Patrick Guillemin, et al. "Internet of Things Strategic Research Roadmap." In *Internet of Things - Global Technological and Societal Trends from Smart Environments and Spaces to Green Ict*. River Publishers, 2011.
- Wang, Leilei, Xiaoheng Deng, Jinsong Gui, Ping Jiang, Feng Zeng, and Shaohua Wan. "A Review of Urban Air Mobility-Enabled Intelligent Transportation Systems: Mechanisms, Applications and Challenges." *Journal of Systems Architecture* 141 (August 2023): 102902. <https://doi.org/10.1016/j.sysarc.2023.102902>.

- “Water, Culture, Civilization, and History.” In *Economical, Political, and Social Issues in Water Resources*. Elsevier, 2021.
<https://doi.org/10.1016/B978-0-323-90567-1.00010-3>.
- Wayne, Jeannie. *The Oxford Handbook of Agricultural History*. Oxford University Press, 2023.
- Zhang, Jun. “Hardening National Boundaries in a Globally-Connected World: Technology, Development and Nationalism in China.” *Journal of Contemporary Asia* 52, no. 5 (2022): 783–804.
<https://doi.org/10.1080/00472336.2021.2001841>.