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Tech Diplomacy: Technology, Agency, Order

Studying Tech Diplomacy—Introduction to the Special Issue on Tech Diplomacy

Corneliu Bjola[1] | Markus Kornprobst[2]

[1]University of Oxford, Oxford, UK | [2]Diplomatic Academy of Vienna, Vienna School of International Studies, Vienna, Austria

Correspondence: Corneliu Bjola (corneliu.bjola@qeh.ox.ac.uk)

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ABSTRACT

This article serves as an introduction to the special issue on tech diplomacy, exploring its emergence and evolution as a distinct approach to global affairs in the era of the Fourth Industrial Revolution. Originating with Denmark's 2017 "TechPlomacy" initiative, tech diplomacy has gained global momentum, with over two dozen countries adopting it to address challenges posed by emerging technologies such as artificial intelligence, blockchain, and 5G. Defined by its dynamic and polylateral nature, tech diplomacy engages a diverse array of actors—including states, tech companies, international organizations, and civil society—to navigate the complex interplay of technological innovation and geopolitical transformation. The paper makes three key contributions to the field. First, it provides a refined definition of tech diplomacy, distinguishing it from related concepts like digital and science diplomacy while emphasizing its focus on innovation power. Second, it introduces an analytical triangle—encompassing technological, agential, and ordering processes—as a framework for studying tech diplomacy's mechanisms and impacts. Third, it maps the field through examples of national initiatives, multistakeholder collaborations, and regulatory efforts, highlighting tech diplomacy's potential to reshape global governance and address inequalities exacerbated by technological disruption. This introduction lays the groundwork for the contributions in the special issue, offering conceptual clarity and practical insights into the transformative role of tech diplomacy in global affairs.

1 | Why Tech Diplomacy Matters?

In 2017, Denmark pioneered a groundbreaking approach to international relations with the launch of 'TechPlomacy,' an initiative that positioned digital technology at the forefront of its foreign and security policy agenda (Klynge et al. 2020). In the wake of the strides made in digital diplomacy over the past decade (Bjola and Manor 2023), Denmark's strategic move signals a new phase of disruption in diplomacy. It showcases how technological innovation is not just influencing, but actively reshaping the way governments engage and collaborate on the global stage. Since then, over two dozen countries have appointed tech diplomats. Some focus on cyber affairs, aiming to enhance global cooperation in cyber governance, advocate for the international rule of law, build mutual confidence, and develop capabilities to counter emerging digital threats (Australia, Finland, Germany, Estonia, Spain, Sweden). Others adopt broader perspectives, fostering connections between their nations and Silicon Valley in business, technology, and investment (Austria, United Arab Emirates, Saudi Arabia, Israel). Overall, tech diplomacy—this is the abbreviated label that is widely in use now—addresses a range of critical technologies

such as artificial intelligence, semiconductors, 5G networks, Internet of Things (IoT), quantum computing, robotics, blockchain, 3D printing, augmented and virtual reality, and synthetic biology, as well as their economic, political, and social implications for international affairs.

Tech diplomacy reflects the growing debate in international diplomacy on how to respond to the rising power of digital platforms and emerging technologies in society at all levels. Two main reasons motivated this initiative. First, technological disruption is driving profound societal changes that affect almost every sector and challenge the global balance of power as well as the domestic values and institutions. Emerging technologies and powerful non-state actors are reshaping foreign policy and geopolitics in new ways, requiring a new diplomatic approach that can navigate the 'hybrid nature' of modern foreign policy, which is influenced by both traditional offline geopolitics and digital networks of state and non-state actors. Second, the multinational tech companies that lead this technological innovation have become extremely influential, matching or even surpassing the economic and political power of many conventional actors, the nation states. These two considerations created a 'diplomatic deficit' in the old structures of international relations, driving diplomats and policymakers to seek innovative approaches to match the rapid pace and impact of new technologies. Tech diplomacy stands out as a critical response to this challenge.

The purpose of this collection of papers is to map the emerging field of tech diplomacy, investigate its political processes, and scrutinize its political outcomes. This makes us ask questions such as the following: Who actually is a tech diplomat and with what kinds of other actors do tech diplomats interact? What elements of digital disruption do they address? How do they interact with one another? How do they come to agree or disagree—tacitly and/or explicitly—about diplomatic solutions to digital disruption? To what extent do these agreements and disagreements leave a lasting impact on international relations? Do they fail or succeed in catching up with ever faster technological progress?

This framing paper is organized into four sections. First, we discuss in further detail what tech diplomacy is. Second, we propose an analytical triangle to study tech diplomacy. Third, we provide an overview of the contributions to this special issue. Fourth, we summarize our main points.

2 | What Is Tech Diplomacy?

A valuable first attempt at defining tech diplomacy is offered by Brazil's Tech Ambassador, Eugenio Vargas Garcia. He likens the concept to 'the conduct and practice of international relations, dialog, and negotiations on global digital policy and emerging technological issues among states, the private sector, civil society, and other groups.' (Garcia 2022). Garcia's definition underscores the adaptive and proactive nature of tech diplomacy, aiming to shape the development and deployment of technology in a manner that enables states to align their national interests with the rapidly evolving digital geopolitical landscape. Yet there is room to improve further on our understanding of the scope and depth of tech diplomacy and its relationship with other concepts such as digital diplomacy, science, cyber or data diplomacy.

Tech diplomacy, as we use it in this project, is defined by two key features: first, tech diplomacy is inherently *dynamic*, continually evolving to meet the fast-paced demands and complex challenges of the Fourth Industrial Revolution. This ongoing digital—and perhaps already in the foreseeable future post-digital—revolution happens at a breathtaking speed and is highly pervasive. As Klaus Schwab put it less than a decade ago, the pace is 'exponential rather than [...] linear' and 'it is disrupting almost every industry in every country'. Due to the speed and pervasiveness of disruption, the Fourth Industrial Revolution has far-reaching repercussions for business, government and people (Schwab 2017). Tech diplomacy thus emerges as a critical instrument of global digital governance for dynamically balancing domestic challenges induced by the Fourth Industrial Revolution with the international opportunities and pressures generated by technological diffusion.

Second, tech diplomacy is *polylateral*[1]. This means that, by definition, tech diplomacy is no longer confined to traditional state actors but involves a diverse network of participants. At a minimum, tech diplomacy encompasses encounters between states and tech companies (Klynge et al. 2020). But tech diplomacy can go much beyond this, adding international organizations, supranational organizations, sub-state actors, civil society groups, scientists, and other experts, celebrities, and so on to the tech diplomatic stage. The reason for why tech companies are interlocutors is rather simple. They are powerful actors on the tech diplomatic stage. *Qua* their expertise, they are—whether we like it or not—more powerful than most states. Polylateralism thus significantly broadens the scope of digital Tech governance, as it necessitates the incorporation of diverse perspectives and expertise from a wide array of actors. This shift places tech diplomacy within a new distribution of power in global affairs, potentially leading to consequences akin to those of the first industrial revolution. The future great powers are emerging now, and it is not guaranteed that they will be states (Bremmer 2021).

Tech diplomacy is part of a family of concepts that, given concrete circumstances under empirical scrutiny, may overlap to varying degrees. Most importantly, these overlaps pertain to the concepts of digital diplomacy, science diplomacy, cyber diplomacy, and data diplomacy. Yet the concepts are certainly not identical (see Figure 1).

Digital diplomacy refers "to the use of digital technologies, such as social media and other online platforms, including virtual communication channels and the metaverse, by ministries of foreign affairs (MFAs) and international organizations (IOs) to communicate with each other and the general public, conduct diplomacy, and advance their foreign policy goals" (Bjola and Manor 2024). It is important to note that while the terms 'digitized' and 'digital diplomacy' are often used interchangeably, they have slightly different meanings. Digitization primarily refers to the technical aspect of adopting digital technologies by MFAs, improving conventional diplomatic engagement with digital tools. On the other hand, 'digital diplomacy' encompasses a broader view of digital technology's role. It serves not only as a communication and collaboration tool but also as a

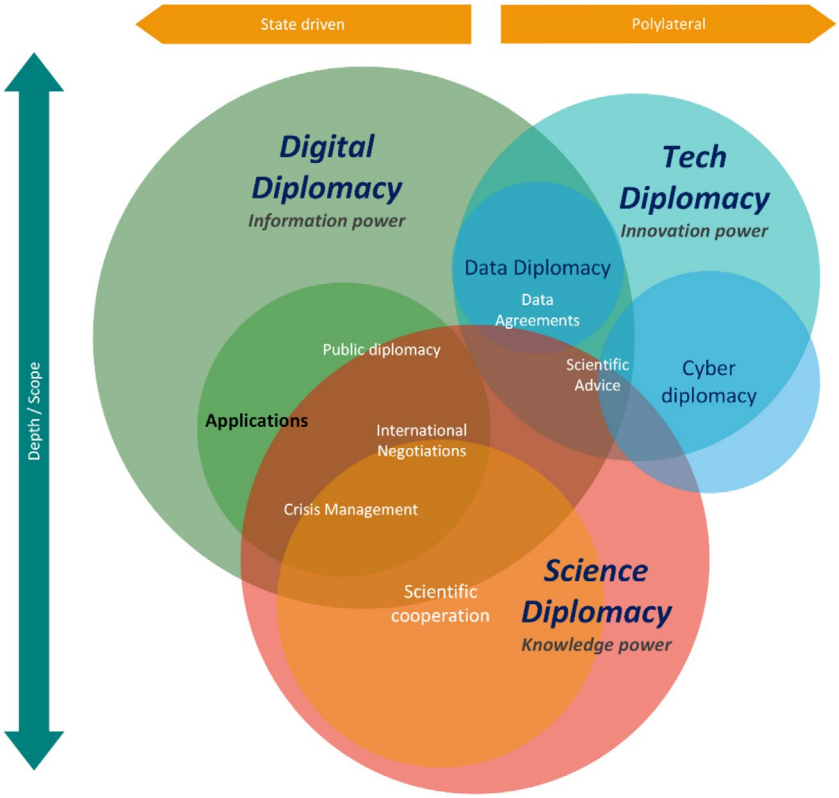

FIGURE 1 | Tech related diplomacies.

different approach to diplomacy. The former is technical and task-oriented, while the latter is conceptual and strategy-focused.

In the context of the graph presented in Figure 1, scope and depth are critical for understanding how different types of diplomacy operate and interact, while the dimension of state-driven versus polylateral diplomacy further clarifies the evolution of diplomatic practices. *Scope* refers to the breadth of diplomatic activity, encompassing the number of areas, actors, or applications involved. Broad-scope diplomacies, such as tech diplomacy, engage diverse actors—including states, corporations, civil society, and international organizations—and span multiple domains like AI, blockchain, 5G, and IoT. In contrast, narrow-scope diplomacies, such as cyber diplomacy or data diplomacy, concentrate on specific challenges like cybersecurity governance or data agreements, involving fewer actors and more specialized domains. *Depth*, on the other hand, reflects the level of expertise, technical knowledge, or complexity required. Diplomacies with greater depth, such as Science diplomacy, depend heavily on technical and scientific expertise, as exemplified by climate science informing international agreements. Meanwhile, less depth-intensive diplomacies, like digital diplomacy, prioritize strategic communication and information dissemination, which demand less technical specialization.

Complementing these dimensions, the *state-driven* versus *polylateral* axis captures the shift in diplomatic practice from traditional state-centric approaches, where national governments dominate (e.g., science diplomacy or digital diplomacy), to polylateral approaches that engage a diverse array of non-state actors, including tech companies, international organizations, and civil society (e.g., tech diplomacy and cyber diplomacy). This shift reflects the increasing need for multistakeholder engagement to address the complex, cross-border challenges posed by technological innovation, highlighting how modern diplomacy requires both expanded scope and deeper specialization to navigate an interconnected global landscape effectively.

As a set of diplomatic practices, science diplomacy has a long history. The literature points out correctly that the 1959 Antarctic Treaty, empowering scientists to a considerable extent, already practices science diplomacy. The 2006 revisions of the International Health Regulations made it obligatory for the Director-General of the World Health Organization to get the advice of an expert panel before determining a Public Health Emergency of International Concern. A number of international organizations practice science diplomacy, ranging from CERN to IASA. The term science diplomacy, as we use it in our days, is also borrowed from diplomatic practice. Following the 2009 Antarctic Treaty Summit, the American Association for the Advancement of Science (AAAS) published a book edited by Berkman, Lang, Walton and Young (2009), whose introduction defines science diplomacy in a threefold manner: 'science in diplomacy' is about scientists providing advice to foreign ministries; 'diplomacy for science' about diplomats facilitating international cooperation among scientists, and 'science for diplomacy' about international scientific cooperation as a vehicle to improve relations among states (Brady 2011).

Nestled between the concepts of digital and science diplomacy lies a spectrum of specialized subclasses, including cyber diplomacy and data diplomacy. These concepts focus on the governance and regulation of critical issues such as cybersecurity, ensuring safe access to cyberspace (Barrinha and Renard 2017), and

facilitating the cross-border transfer of data (Boyd et al. 2019). Depending on the characteristics of empirical cases under scrutiny, tech diplomacy may overlap with digital diplomacy and/or science diplomacy to various different degrees. Tech diplomacy connects digital diplomacy and science diplomacy by recognizing the role of technology in both domains. Digital diplomacy utilizes technology as a communication and collaboration tool, while Science diplomacy leverages scientific cooperation to foster international relations. Tech diplomacy also connects with data diplomacy by addressing data-related issues and facilitating discussions on data governance and privacy. It also connects with Cyber Diplomacy by focusing on cybersecurity challenges and promoting responsible behavior in the digital realm.

At the same time, however, there are important differences among the concepts as well. Tech diplomacy is not just about the nature of communication channels but about a particular diplomatic field—the one underpinned by the rapidly unfolding Fourth Industrial Revolution—and its distinct players. Tech diplomacy is in one way broader and in another narrower than Science diplomacy. Unlike in Science diplomacy, these players go much beyond state representatives and scientists. They include tech companies as well. But science diplomacy can be about anything having to do with the full spectrum of scientific disciplines and inter-disciplines. Tech diplomacy tends to be more confined to those scientific endeavors that deal with rapidly evolving hands-on knowledge driving the Fourth Industrial Revolution forward, say on artificial intelligence, blockchain, and 5G. Most importantly, tech diplomacy introduces a new form of power in diplomacy. At its core, digital diplomacy revolves around *information power*—the ability to control and disseminate information through digital channels, influencing public opinion and shaping diplomatic outcomes. Science diplomacy centers on *knowledge power*, leveraging scientific expertise to shape policy agendas. In contrast, tech diplomacy adds a novel dimension to the mix: *innovation power* (Schmidt 2023). This is about innovating, regulating, and integrating technology within diplomatic practices.

The interplay between knowledge power in science diplomacy, information power in digital diplomacy, and innovation power in tech diplomacy highlights distinct yet interconnected dimensions of influence in modern diplomacy. Knowledge power, as seen in Science diplomacy, derives from the ability to leverage scientific expertise to inform policy and foster collaboration, exemplified by the IPCC's guidance in climate negotiations or the Antarctic Treaty's reliance on scientific input. This is fundamentally about advancing global understanding through empirical rigor. Information power in digital diplomacy, on the other hand, revolves around the control, dissemination, and strategic use of digital platforms to shape public opinion and diplomatic narratives, evident in India's Ministry of External Affairs' Twitter/X diplomacy or Russia's use of digital disinformation. Innovation power, unique to tech diplomacy, introduces a new dynamic focused on creating, regulating, and integrating transformative technologies like AI or blockchain into diplomatic frameworks. Unlike the other two, innovation power actively drives change rather than merely influencing or informing existing structures. For instance, Denmark's tech ambassador model exemplifies how innovation power redefines traditional diplomatic roles, while the European Union's proactive regulatory approach to AI governance demonstrates its ability to set global norms. The integration of these powers creates opportunities and tensions: knowledge power brings depth and credibility; information power enhances reach and engagement; and innovation power fuels transformation but also demands careful ethical oversight to prevent issues like surveillance overreach or marginalization of smaller states. This triad of powers in tech diplomacy underscores the need for adaptive frameworks that balance expertise, communication, and technological advancement in addressing global challenges.

3 | How to Study Tech Diplomacy?

Partly borrowing from previous research on digital international relations (Bjola and Kornprobst 2023), this section introduces an analytical triangle to study tech diplomacy. The triangle prompts us to study technology, agency, and order (i.e., the three corners of the triangle) as well as how they relate to one another. This is depicted in Figure 2.

Studying tech diplomacy without carefully looking at the technological processes that underpin it is simply undoable. For one, these processes tell us important things about how tech diplomacy emerged in the first place. Without the rapid—and in many ways disruptive—technological progress of our times, there simply would be no Tech diplomacy. It professes to react to the ongoing tech revolution. It may not always be successful in doing so. But since its goal is to catch up diplomatically with the enormous pace set by technological innovation, the latter is to be studied carefully.

There cannot be a hard and fast rule for what technologies the analyst should be on the look-out for. While tech diplomacy, in our days, deals primarily with the technologies associated with the Fourth Industrial Revolution, there are already all kinds of technologies around that may help usher into a Fifth Industrial Revolution[2]. Leaps forward in artificial intelligence and quantum computing are among these. Furthermore, it would not make sense to draw an analytical separation line between digital and physical technologies. There are all kinds of 'digital-physical mashups' (Rigby 2014), and these need to be included in making sense of the technologies that matter for tech diplomacy. Thus, it is most useful to bear in mind what Garcia writes in his contribution to this special issue. Studying tech diplomacy necessitates putting *emerging technologies* under scrutiny. The Centre

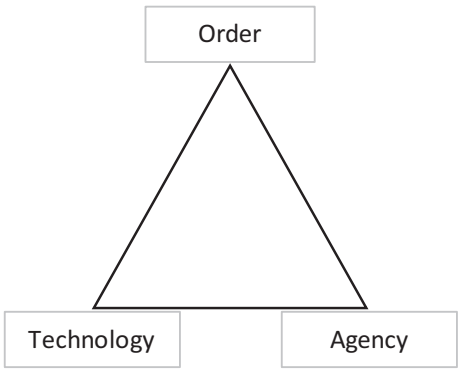

FIGURE 2 | The analytical triangle.

for the Fourth Industrial Revolution, for instance, provides researchers with a little help in this regard. Based on survey data with scientists and experts, it publishes an annual report on the Top 10 Emerging Technologies (n.d.). More in-depth research on the 'tech' in tech diplomacy should use primary sources, such as expert interviews, as well.

The most basic question to ask about agency is who the actors of tech diplomacy are. A simple answer, pointing to state representatives labeled tech diplomats, will not do. There are, for instance, the experts, such as computer engineers and software developers, that push the boundaries of technological transformation; there are specialists, ranging from biochemists to nuclear physicists, who put new technology to use; there are private companies and at times public-private partnerships that make all of this happen; and there are, in the Global North at least, also venture capitalists who provide the financial means that make innovation possible. Even this list of possible actors is not long enough. Universities and their scientists cooperate with tech companies, international organizations seek to put rules into place to channel innovation into warranted directions, and so on. Examining tech diplomacy requires taking *different kinds of actors* seriously and inquiring into their polylateral encounters.

How do these different kinds of actors interact? This, too, is a crucial question about agency. At least three dimensions are of analytical interest. First, do they speak *with or past one another*? Speaking with one another requires a certain stock of shared knowledge (Myers 2007). A software developer has a highly specialized and technical expertise. A diplomat is trained to be a generalist, serving the national interest. A CEO of a Tech company has expertise for how to maximize profits. A civil society advocate puts standards of political appropriateness to use. It is not to be taken for granted that these different groupings of actors can speak meaningfully to one another (Blume and Rauchbauer 2022). Second, do the actors '*mediate estrangement*' [emphasis added][3] between the different worlds they are situated in, and, if so, how? What possibilities are there to bridge the worlds and translate terms and concerns from one world into another? To stick with the above example, software developers are unlikely to even think about possible political consequences of their innovations. This could happen in encounters between them, tech diplomats, and civil society organizations, but only if they find some kind of a shared language. Third, how are their *encounters structured and with what effects*? Do powerful actors prevail using sticks and carrots? This is what, among the main contending approaches in international relations theory, realists (disincentives and incentives) and, up to a point, liberals (incentives) would expect.[4] Alternatively, do actors succeed in swaying others or are there even kinds of deliberative moments in which they converge together upon common understandings and ways to act upon them? This is how different variants of constructivism would make sense of interaction.[5]

There is a political order in which technological and agential processes play out and that, in turn, shapes these processes. Again, there are three dimensions awaiting analysis. First, the material one is constituted by the *distribution of technological capabilities* across actors.[6] This distribution structures their interaction. On the one hand, this is a distribution across states. Some states have much more tech capabilities at their disposal than others. When it comes to artificial intelligence, for example, the United States, China, and the European Union are important players. Others, such as India, are rising tech great powers. Most other states in the world are much less technologically advanced. This pronounced vertical relationship is often referred to as 'digital gap' (Winger et al. 2024; David and Phillips 2023). On the other hand, major tech companies greatly outperform the great majority of states when it comes to technological expertise. At least smaller states and even middle powers, therefore, do not always have it easy to stand their ground against techgiants. Fletcher (2016) uses a drastic metaphor to describe this power differential when he writes about 'Naked Diplomacy'.

Second, there are *foreground* institutions. These are negotiated and designed by actors, usually states, and list the dos and don'ts in memoranda of understandings, declarations, treaties and so on. The recently adopted Global Digital Compact (United Nations 2024), for example, is a declaration. Yet regulating tech is anything but easy. For one, technological progress leapfrogs and regulatory instruments are bound to play a catch-up game, even if it could anticipate some of this progress and regulate before technological innovation shapes politics. Yet agreeing on rules is difficult. Tech giants are very reluctant to let states interfere with their practices. Among state governments, Washington also tends towards libertarian practices. The European Union, by contrast, is much more eager to define rules and not to fall too far behind in the catch-up game with major tech firms. China puts tight controls in place in domestic politics but is very reluctant to agree with other states to dos and don'ts of tech (Feijóo et al. 2020).

Third, the ordering *background* is constituted by spontaneously evolving ordering elements. Borrowing from Adler (2019), we conceptualize the background as usually unreflected hand-on knowledge ('background knowledge') and the practices ('general classes of action') that are 'bound up' with them.[7] For studying tech diplomacy, background configurations of differences and similarities are of major importance. The different worlds, mentioned above, that actors inhabit amount to different stocks of background knowledge along with all kinds of challenges to translate and to bridge that comes with these differences. Yet there are also converging traces of background understandings that crisscross between some of these knowledge stocks and the actor groupings who hold them, and many of these are anything but politically innocent. Take racial prejudices, for example, that seep into algorithms (Chander 2016), or a seemingly invisible colonialism that underpins the digital health agenda (Sekalala and Chatikobo 2024). Arguably, the very institutionalization of tech diplomacy is telling about shifting relations of "productive power" (Barnett and Duvall 2005). In traditional diplomacy, states set up representations in the capitals of other states. Yet Silicon Valley is not Washington. States follow the Tech Companies (Engtoft Meldgaard and Fletcher 2024).

Meaningful investigations into tech diplomacy are located in the triangle. Doing research on a single corner of the triangle or even a single side of it misses out on important pieces of the overall puzzle. In the social sciences, realistically speaking, most research is likely to be located in between agency and order. Few researchers can balance expertise on technology on

the one hand and political processes on the other. Nonetheless, taking technology seriously really is important, even so important that it often requires educated guesses about the future regarding what kinds of technological developments are likely to happen. Otherwise, it is, for example, impossible to study the making of appropriate rules regulating usages of artificial intelligence ranging from (semi-)autonomous weapons to peaceful use (Justo-Hanani 2022).

4 | Contributions

This special issue examines tech diplomacy through the analytical triangle of technological, agential, and ordering processes, aligning closely with the interplay between state-driven and polylateral approaches, as well as variations in scope and depth. The contributions highlight how tech diplomacy operates at the intersection of these axes, with some emphasizing state-led strategies and others foregrounding multistakeholder engagement. Katharina Höne inquiries into the extent to which tech diplomacy really is a new agential practice. Analyzing the moves towards tech diplomacy in a number of countries, including Australia, Denmark, and Switzerland, she shows that there is an evolution from earlier forms of narrower state-driven approaches in internet governance to broader, more polylateral frameworks of engagement. Her analysis aligns with diplomacies situated higher on the scope axis, emphasizing multistakeholderism as an ordering mechanism while navigating the tension between traditional and innovative practices.

Extending our analytical gaze beyond states usually ascribed to the 'West', Zhao and Meng examine Chinese tech diplomatic practices, which operate at the intersection of state-driven strategy and ideological innovation. While China critiques tech diplomacy as a Western hegemonic tool, it simultaneously advances its science diplomacy-inspired practices to assert control over technological norms. This reflects a state-driven yet high-depth approach, where technological agency is tightly linked to national sovereignty and ideological narratives. The toolbox for doing so evolved out of the older understanding of science and technology diplomacy. When the two concepts parted ways, the former remained closely aligned with Marxist-Leninist ideology while the latter, much freer from ideological connotations, is about the nuts and bolts of technological innovation and its political implications.

Barrinha and Calderaro look at the European Union's actorness in tech diplomacy. Engaging with conceptual overlaps of digital diplomacy and tech diplomacy, they show that the formulation of diplomatic strategies to address the Fourth Industrial Revolution is very much a political affair. It does not neatly follow scholarly delineations of tech diplomacy. The European Union's strategy is very much geared towards regulation—both domestically within the European Union and globally by disseminating its standards. Brussels sees itself as an ordering power in international politics, especially in the field of emerging technologies, embodying a model that is multilateral in approach yet fundamentally state-driven.

This model is further elaborated by Bjola and Csernatoni, who highlight the challenges of agency and coordination within the EU–US Trade and Technology Council. These insights reflect the EU's dual ambition to act as a normative power while grappling with the complexities of transatlantic cooperation. Bjola and Csernatoni pursue this line of research further by inquiring how the European Union's strategic tech geopolitical resolve affects the making of institutions. Studying the EU–US Trade and Technology Council (TTC) in depth, they show that agency affects the making of the foreground and background of order. Yet they also point to numerous problems that the TTC struggles to overcome, given at times contradictory moves by the European and the United States. The authors contend that the TTC would require more foreground and background coordination in order to achieve better outcomes.

Hurel and Seppänen emphasize the increasing influence of private companies in specialized fields like cybersecurity, underscoring how tech diplomacy redefines traditional state sovereignty. Their findings point to the polylateral nature of tech diplomacy, where non-state actors co-construct diplomatic agency and shape order, especially in areas traditionally seen as "high politics". If statecraft comes to be constituted, at least in part, by private companies in this field, we should expect that much more of this is happening in other fields that count merely as 'low politics'. Tech diplomacy, in other words, is reconfiguring the very institution of diplomacy.

Chiu and Kornprobst ask whether tech diplomacy has made inroads into ordering outer space. Having presented *prima facie* evidence for polylateral encounters (states, experts, tech Companies and civil society), they zoom in on a fundamental question about the evolving space order: Do such polylateral encounters even extend to rendezvous and docking standards in space? Studying such standards since the 1970s, they demonstrate that tech companies play an increasingly important role in framing these standards and developing them further. This is an important finding. Without rendezvous and docking standards, cooperation between different spacefaring nations and between such nations and private companies would be seriously curtailed. Private companies have carved out a role for themselves—and were encouraged to do so by some state actors—for partaking in making an international aspect of the outer space order.

Finally, Garcia's call for a development-centered approach to tech diplomacy resonates with broader concerns about inclusivity and equitable distribution of technological benefits. His advocacy for co-governance aligns with a high-scope, polylateral model that seeks to counteract the inequalities perpetuated by state-driven technological supremacy and emerging "Tech Cold Wars". Garcia, himself a tech diplomat, envisions a genuine co-governance with the participation of all interested parties in a multistakeholder setting that is able to address structural limitations and power imbalances to prevent widening inequalities. He juxtaposes this to prevailing practices of digital supremacy and an evolving new Tech cold war, which acts against the concerns of the great majority of the world's population.

Across these contributions, the special issue maps how tech diplomacy navigates the analytical triangle, engaging with varying levels of state-driven and polylateral approaches, as well as differing degrees of scope and depth. Together, they reveal

tech diplomacy's transformative potential in addressing global challenges, while cautioning against its risks in exacerbating inequalities and geopolitical fragmentation. Ultimately, tech diplomacy emerges not just as a tool for negotiation but as a critical arena where technological innovation, power dynamics, and multistakeholder collaboration converge to shape the future of the global digital order.

5 | What Tech Diplomacy Changes?

This special issue addresses three fundamental questions central to the study and practice of tech diplomacy, offering both conceptual clarity and practical insights. *What is tech diplomacy?* It is defined as a polylateral approach to navigating the challenges of the Fourth Industrial Revolution, engaging both state and non-state actors to address the rapid pace and complexity of technological and geopolitical transformations. Contributions emphasize tech diplomacy's distinctive focus on innovation power, which enables states, corporations, and other stakeholders to not only manage disruptions but also proactively shape technological norms and practices.

How should tech diplomacy be studied? The analytical triangle introduced in this issue—focusing on technology, agency, and order—offers a dynamic framework for understanding tech diplomacy's evolution and impact. This model captures the complexity of interactions between state diplomats, tech companies, international organizations, and civil society, demonstrating how these diverse actors mediate estrangement and negotiate shared norms. It also highlights the importance of studying technological processes, such as AI and blockchain, as drivers of global change while scrutinizing the political and institutional shifts they induce. The framework underscores that tech diplomacy is not merely reactive but actively constructs new paradigms of governance and collaboration.

What outcomes does tech diplomacy generate? The contributions reveal its transformative impact on political and institutional structures. Key outcomes include the regulation of secure technology supply chains, progress in arms control, and advancements in digital governance frameworks. For example, the European Union emerges as a regulatory power, leveraging tech diplomacy to project its standards globally. Similarly, tech diplomacy redefines sovereignty by integrating the influence of private companies into traditionally state-driven domains, as evidenced by the cybersecurity field and outer space governance. These outcomes highlight tech diplomacy's role in reshaping power dynamics, bridging gaps between state and non-state actors, and addressing the inequalities exacerbated by technological disruptions.

By directly engaging these themes, the special issue demonstrates that tech diplomacy is more than a response to technological change; it is a critical arena where global norms are contested, negotiated, and established. Through its ability to integrate innovation, foster multistakeholder collaboration, and manage the intersection of technology and geopolitics, tech diplomacy is positioned as an essential tool for building a more adaptive and equitable global governance system in the digital age.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

Endnotes

[1] The term is originally Wiseman's (2010).

[2] Whether this will result then in the "harmonious integration of humans and technology to address the world's pressing problems in the future" (Ziatdinov et al. 2024, 19) it is a question that will depend in no uncertain terms from how tech diplomacy evolves.

[3] This is a useful phrase that Der Derian (Derian 1987) coined to characterize diplomacy more broadly. Yet it fits very well the doings of tech diplomats due to their inherent in-between positioning between traditional diplomacy and the tech sector.

[4] On realism, see in particular (Morgenthau 1948; Waltz 1979; Schweller 2006) on liberalism, see (Snidal 1985; Keohane and Nye 1977).

[5] On swaying and winning over, see, for example, (Kornprobst 2007; Niemeyer et al. 2023; Holzscheiter et al. 2022).

[6] This phrase borrows from Waltz's (1979) writings on the distribution of military capabilities.

[7] For an earlier conceptualization of the background as epistemic knowledge constituting a policy paradigm, see (Rushton and Williams 2012).

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