ANALYTICAL ESSAY

Infrastructures and International Relations: A Critical Reflection on Materials and Mobilities

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In a world of accelerated movements, this article examines how infrastructures matter in international relations. We first show that the International Relations (IR) discipline has relegated infrastructures to the background of their studies and treated them as passive tools despite their forcible role in the establishment of the modern state system. By adopting a sociological definition of "the international," this article emphasizes the centrality of materials and mobilities in thinking about the international and calls for a novel infrastructural lens in the IR discipline. We argue that infrastructures provide crucial mechanisms for forging the distinctions between units that constitute the international as a separate realm. We outline how infrastructures continuously transform this realm through re-scaling and re-ordering spaces, polities, and people. In the meantime, infrastructures are at the heart of social processes, which generate knowledge practices that constitute the international. They inscribe themselves in discourses, produce meaning, and shape identities, and they are thus part of the ideational underpinning of the international. We conclude by advocating a shift in the analytical weight of materials in IR, premised on an interdisciplinary dialogue, and suggest a theoretical and methodological recalibration of the discipline's treatment of infrastructures.

En el contexto actual de un mundo caracterizado por movimientos acelerados, este artículo examina la importancia que tienen las infraestructuras sobre las relaciones internacionales (RRII). En primer lugar, demostramos que la disciplina de las Relaciones Internacionales (RRII) ha relegado las infraestructuras a un segundo plano dentro de sus estudios y que las ha tratado como si fueran herramientas pasivas, a pesar de su importante papel en el establecimiento del sistema estatal moderno. Este artículo adopta una definición sociológica de "lo internacional", lo que nos permite enfatizar la centralidad de los materiales y de las movilidades en el pensamiento

de lo internacional, así como reclamar una nueva lente infraestructural dentro de la disciplina de las RRII. Argumentamos que las infraestructuras proporcionan mecanismos cruciales que sirven para forjar las distinciones entre las unidades que constituyen lo internacional como un ámbito separado. También, describimos cómo las infraestructuras transforman continuamente este ámbito a través de la reestructuración y el reordenamiento de espacios, políticas y personas. Mientras tanto, las infraestructuras se centran en los procesos sociales, que generan prácticas de conocimiento que constituyen lo internacional. Se inscriben en los discursos, producen significados y dan forma a las identidades, por lo que forman parte de la consolidación ideacional de lo internacional. Concluimos este artículo abogando por un cambio en el peso analítico de los materiales en el campo de las RRII. Este cambio debe surgir de un diálogo interdisciplinario, y, para ello, sugerimos una recalibración teórica y metodológica del tratamiento de las infraestructuras por parte de la disciplina.

Dans un monde où les mouvements s'accélèrent, cet article s'intéresse à l'importance des infrastructures dans les relations internationales. Nous montrons d'abord que la discipline des relations internationales (RI) a relégué les infrastructures au second plan de ses études et les a traitées tels des outils passifs malgré la puissance de leur rôle dans l'établissement du système de l'État moderne. Adoptant une définition sociologique de ≪ l'international ≫, cet article souligne la centralité des informations et des mobilités lorsqu'il s'agit de penser l'international et appelle à la création d'un angle infrastructurel inédit dans la discipline des RI. Nous affirmons que les infrastructures fournissent des mécanismes cruciaux d'établissement des distinctions entre les unités qui constituent l'international en un domaine distinct. Nous montrons que les infrastructures ne cessent de transformer ce domaine en redéfinissant l'échelle et l'ordre des espaces, des régimes politiques et des populations. D'autre part, les infrastructures se trouvent au cœur des processus sociaux, qui génèrent des pratiques de connaissances qui constituent l'international. Elles s'inscrivent dans les discours, produisent du sens et façonnent les identités. Elles font donc partie intégrante du fondement idéationnel de l'international. Nous concluons en défendant une modification du poids analytique des informations en RI, motivée par un dialogue interdisciplinaire, et suggérons un recalibrage théorique et méthodologique du traitement des infrastructures par la discipline.

Keywords: infrastructures, international relations, mobility, materials, the international, state
Palabras clave: infraestructura, Relaciones Internacionales, movilidades
Mots clés: infrastructure, relations internationales, mobilités

Introduction

Infrastructures matter. Larkin (2013, 328) defines infrastructures as "built networks that facilitate the flow of goods, people, ideas and allow for their exchange over space." Infrastructures build connections and facilitate how humans engage with and experience the world. Despite their radically uneven distribution and varying quality, infrastructures are deeply ingrained in people's lives; they are "essentially everywhere" (Charbonnet and Siress 2017, iv) and have a nearly "invisible presence" (Stalder and Daro 2017, 26). Infrastructures make movement possible but also provide potentials for spatial mobility.[1] Infrastructures expose the multiple solid moorings and "spatial fixes" (Harvey 2001a) that enable, direct, shape, and differentiate

mobilities. In short, infrastructures are at the heart of power asymmetries, where materials and mobilities intersect (Hannam et al. 2006, 3). The International Relations (IR) discipline has only recently paid attention to the materials underpinning movements that constitute "the international." Infrastructures were long taken for granted in IR, treated as tools used to exert power or as technical devices, built, managed, and sustained by engineers and technicians.

While infrastructures go unnoticed in ordinary times, media attends to infrastructures if they fail, are disrupted, or become objects of conflict. Recent examples include the attacks on commercial ships in the Red Sea or the abandonment and bombardment of the North Stream gas pipe systems used to deliver gas from Russia to Germany. When a massive container ship blocked the Suez Canal in 2021, causing a traffic jam in one of the most frequented sea streets and threatening to interrupt global supply chains, infrastructures came to the fore of discussions. The shutdown of Chinese harbors because of Beijing's zero-COVID strategy is another example of the impact of infrastructure interruption on global supply chains (Tan 2021). Past historical failures and accidents in overseas and land transport had significant impacts on the international system. The sinking of the Titanic on its first transatlantic passage in 1912, for example, became a catalyst for the establishment of maritime laws and standards (NOAA 2024). Deeply entangled in notions of modernity, train accidents, not uncommon in the nineteenth and early twentieth centuries, initiated the development of insurance systems across Europe (Caplan 2001; Eghigian 2001; Harrington 2001). The 1986 accident of the Chernobyl Nuclear Power Plant in Ukraine (then part of the Soviet Union), due to its significant environmental and health repercussions, contributed to discussions on nuclear power.

Infrastructures have seldom gained attention in IR, except when their establishment required prolonged diplomatic engagement, generated conflicts between states, became both means and targets of violent contestations (Weinthal and Sowers 2019), or were considered critical to peace, security, and stability (Aradau 2010; Schouten 2014).[2] Infrastructures were recognized by some scholars as the physical scaffolding necessary for the expansion and consolidation of empires and states, acknowledging that infrastructural booms shaped "the long 19th century" (Hobsbawm 1989, 11), causing structural transformations of international relations. Nonetheless, infrastructures were treated as mere fragments within wider historical and theoretical understandings of the international and its transformations. The boom in infrastructural megaprojects in the Global South, which gained momentum after China announced its Belt and Road Initiative (BRI) in 2013, has drawn scholarly attention to the material aspects of international politics. Driven by international investments, new roads, corridors, railways, airports, deep-water harbors, dams, power lines, broadband cables, and satellite systems are mushrooming all over Africa, Asia, and Latin America.

Policymakers, practitioners, and scholars agree that these projects change the face of the international, arguably to a degree that resembles the infrastructural boom during Europe's industrial revolution and imperial expansion. An interdisciplinary body of research has emerged during the last two decades and challenged the concept of infrastructure as a politically neutral set of physical artifacts. Initially perceived as "mundane"—such as plugs, telephones, railways, roads, pipelines, etc.—the study of "boring things," as Star (1999) calls them, has seen a veritable expansion around the turn of the twenty-first century (Larkin 2013; Barry 2020). Scholars of philosophy, science and technology studies (STS), anthropology, sociol-

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[1]Mobility potentials or "the capacities of individuals to be mobile" (Kaufmann 2002, 37) are shaped by the availability and accessibility of transport systems. We use "mobility" for any form of spatial movement, human or non-human, and we use it interchangeably with flow and circulation. We, however, outline in the article that infrastructures are central to mobility potentials (or motility).

[2]Since 2008, a whole journal has been dedicated to the security of infrastructures, the *International Journal of Critical Infrastructure Protection*.

ogy, history, urban studies, and geography have examined how infrastructures are imbricated in social, and by extension in political and economic relationships. Their findings raise critical questions about actors and agency in a physical world, perils and promises of infrastructures, and intersections between materials and affects.

Even though the "material turn" has made its way to the IR discipline (Srnicek et al. 2013; Acuto 2014; Lundborg and Vaughan-Williams 2015; Smirl 2015, 2008), infrastructures continue to be treated as unanalyzed givens in much of IR theorizing. Most scholars attending to the material dimensions of politics either tend to focus on the local, looking at particular infrastructures such as a road, a dam, or a power grid, or at the global, often assessing the capitalist reordering of the world, but overseeing or ignoring the international (Salter 2015, xiii). This oversight, we argue, is not accidental, as infrastructures bring to the fore conceptual problems of space, scale, and agency that constitute the international as a distinct lens for academic inquiry, delineating it from the global, national, or local.

What constitutes the international is contested (Rosenberg 2016). Most IR theories take their starting point from the distinction between institutional realms, prominently states, and then further differentiate between the state (the political) and societies and markets (the social and economic), or delineate political entities on a sub-, intra-, or supra-national level implicating a world of nested hierarchies centered around the state. IR scholars analyze relations between these political entities, assuming a "fundamental disjuncture" between their internal political life and external relations (Rosenberg 1994, 4). We concur with Mitchell (1991b, 2002) that the setting of such distinctions is a central characteristic of modernity, and we point in this article to the agentic role of infrastructures in forging these distinctions. Infrastructures, we argue, have a generative role in constituting the international as a distinct realm of inquiry that is different from the local and the global. However, we also show how the contemporary infrastructural boom blurs the very same distinctions that infrastructures once helped in setting up. These developments lend themselves to a conceptualization of the international as "phenomena arising from the interactive multiplicity of societies" (Rosenberg 2013, 183), whereby societies are not defined by state boundaries but also include tribes, clans, kingdoms, cities, and empires, among others (Rosenberg 2013, 200; 2016, 9).

In a world of accelerated movements, this article examines how infrastructures matter in international relations. The article starts with the observation that infrastructures are not typically acknowledged in the IR discipline despite the forcible role they have in the construction of the modern state system, where states are attributed an ontological primacy. We review how the IR discipline has either directly or indirectly addressed the role of infrastructures in dominant understandings of international order. We then present a sociological definition of the international, which underpins our argument in the remainder of the article. We outline how infrastructures make states through re-scaling and reordering spaces, polities, and people. While we emphasize how material practices and infrastructural flows generate relations of power in the international, we also attend to the way infrastructures are inscribed in collective and individual identities thus underpinning ideational aspects of the international.

This article makes several contributions. First, and based on a review of how infrastructures are conventionally studied in IR, we put IR in communication with an interdisciplinary body of infrastructure research. Second, we show how thinking about the international through an infrastructural lens provides a novel perspective as it acknowledges the centrality of materials and movements in the constitution and transformation of the international. We explore how infrastructures alter space and order at the international level while inscribing[3] themselves in discourses, producing meaning, and shaping identities. Third, we outline how an infrastructural lens

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[3]For the notion of inscription, see Walters (2002).

lends itself toward a reading of the international that acknowledges an ontological multiplicity beyond the state. Infrastructures underscore the slowly shifting focus of IR to relations and encounters that, as Latour (2005, 65) or Barad (2007, 23) suggest, are not composed of rational agents but moving agencies. Agency, in this reading, is not an attribute of things or humans, but moves in between and unfolds through motions and encounters of bodies and things. To conclude, we show that an infrastructural lens offers a fresh perspective for the study of geopolitical and ideational formations in their becoming and allows for the theorization of transformations of the international. This perspective lays out a theoretical reflection for IR scholarship premised on an interdisciplinary dialogue.

Infrastructures and "the International" in IR Theory

Despite their evident importance, infrastructures remain largely absent in IR theorizing, where they are treated as secondary fragments within wider historical and theoretical understandings of the international. This is not to deny that IR acknowledged the significance of infrastructural innovations. Scholars across various IR approaches have emphasized their significance for the development of the international system. We can identify two major ways in which IR scholars have engaged with infrastructures that reflect a wider understanding of materials in IR (McCarthy 2018). The first and dominant strand understands infrastructures as tools, to be developed and used by humans, who determine their function and lifespan. The second strand is illustrated in the English School, which acknowledges that infrastructures create connections that are imbued in relations of power and have far-reaching systemic effects. Infrastructures further foster and perpetuate these relationships, leading to changes in the depth and character of an international or world society.

In the first strand, IR scholars pay attention to the role of infrastructures—especially transport and communication—in the formation of the international system of states and in determining positions of power in this system. Infrastructures are considered neutral things, objects of interest, or resources that are possessed, fought over, or, in the best-case scenario, cooperatively governed. Realists, for example, through their concept of power, focus on military and economic resources (including infrastructures) available to states. Realist scholars tend to see international relations as of a strategic, political, and military nature, and states rise and fall as their material and economic capabilities wax and wane compared to others in the international system (Donnelly 2000). This view is currently illustrated in debates on the relationship between infrastructure and geopolitics, a debate that often focuses on the rise of China and the threat of its BRI to the hegemony of the United States (Owen 2019; Ho 2020; Li 2020; Hillman and Sacks 2021). Similarly, others argue that countries use infrastructures to expand their political interests, such as Khalili's (2018, 2020) examination of the United States' geopolitical and geomilitary advances in the Middle East or Zhao's (2023) work on the strategic competition between China and the United States in the Indo-Pacific. These views interpret infrastructures primarily as tools used by states or their politico-economic elites to accumulate profit and power while perpetuating or challenging geopolitical hegemonies. In short, ontological primacy is, in this view, assigned to the social world, while materials and infrastructures are interpreted as passive.

A second strand of reasoning builds on the concept of power as ingrained in socio-technical systems, a view that gained traction in the globalization debate. This line of argument can be exemplified in the work of the English School (Buzan and Little 2000; Buzan and Lawson 2015). Infrastructural developments in the wake of the nineteenth-century European Industrial Revolution enhanced the "interaction capacity" of the international system, that is, the "capability of a system to move ideas, goods, people, money and armed forces across the system" (Buzan and Little

2000, 80–4; Buzan and Lawson 2015, 69). The expansion of infrastructures is, therefore, acknowledged as driving change and transforming the international system. Buzan and Lawson (2015) differentiate physical from social interaction capacity, the former embedded in the advancement of fast, mass transportation over land and sea, high-speed communication (radio, telegraph, and telephone), and engine-driven transport replacing horsepower and sailing ships. New infrastructures created unprecedented levels of interdependence (Lawson 2016). They provided more than the material foundation for a new international society or an emergent world society, but initiated a "global transformation" (Buzan and Lawson 2015) enabling a power shift toward the West, which dominated newly established networks for extractive purposes. Applying a new materialist language to the English School, one could argue that scholars have implicitly pointed to the agentic qualities of infrastructures, even though they were not identified as such, and their analytical focus remained on human interactions.

Globalization debates engage with "changes in the shape, scale, and extensity of social processes" (Oke 2009, 310), which would not have been possible without infrastructure developments, especially relating to information and communications technologies. The study of socio-technical networks became especially prominent in STS, revealing how the societal and technological are continuously stitched together integrating the material, normative, and social with the natural and with the way we know about and imagine the world (Jasanoff 2015). These "entanglements" of infrastructure, technology, environment, knowledge, and politics have become the focus of debates across various disciplines. Scholars examined how infrastructures are not only tools in the hands of elites or governments, but also how politics, security, and state- and nation-building are enmeshed with technological systems, tracing their historical and geographical entanglements with things and technologies (Hecht 2011; Maximilian and Acuto 2015; Rowland and Passoth 2015). Scholars attending to the technological and societal layers of infrastructural development have shown how these entanglements transcend state control as they connect processes and practices at different scales (Easterling 2014; Klimburg-Witjes et al. 2021).

Despite the resurgence in the study of infrastructures across various disciplines, IR showed only limited theoretical engagement with infrastructures. The densification of (infrastructural) connections after the Cold War was often interpreted in IR as undermining the very same state system that infrastructural connections once enabled. IR scholars tried to understand the observed changes within the predominant ontological-epistemological framework centered around the state, even if they acknowledged that the state may lose its place as a central holder of authority and that sovereignty might be divided, shared, or, in a worst-case scenario, evaporate (Strange 1995; Krasner 2005). Explanations for such failures were mostly derived from political dynamics within states, including more recently infrastructural gaps (for critique, see Goodfellow 2020; Ziadah 2023, 53). New metrics were developed to account for these gaps, such as the Logistics Index developed by the World Bank in 2004 or the Liner Shipping Connectivity Index developed by the United Nations Conference for Trade and Development in 2007 (Ziadah 2023, 53). Supporting infrastructure development, therefore, became central for international attempts to strengthen states and foster economic growth (Nugent 2018; Gillespie and Schindler 2022).

Infrastructures are increasingly making demands on IR. Despite the exponential growth of studies attending to infrastructures, the international is mostly overlooked (Salter 2015, xiii). In the following sections, we ask what can be gleaned if we take the infrastructural underpinning of the international seriously. To answer this question, we first attend to the international. The IR discipline grew from the assumption that the international constitutes "a specific *realm* of the social world" (Albert and Buzan 2017, 899), which evolved due to the differentiation between

inside and outside of relatively stable political units, mostly states. Based on this assumption, IR scholars have made various proposals about the international, prominently realists and liberals defining it as relations between sovereign states, with a clear separation between international and domestic, while others have more generally conceptualized the international as anything that spans across state borders. The discipline is thus concerned with the study of relations between states and increasingly also non-state actors. Nevertheless, the IR discipline has not engaged much with questions about the constitution of its main object, i.e., what the international is.

One of the more recent attempts to conceptualize the international, on which we build in this article, is Rosenberg's elaboration of the international as "those phenomena arising from the interactive multiplicity of societies" (Rosenberg 2013, 183). Expanding on Trotsky's idea of "uneven and combined development," Rosenberg develops a sociological conceptualization of the international as the "dimension of social reality that arises specifically from the co-existence within it of more than one society." He thus rejects an ontological singular of the international but emphasizes multiplicity that arises from (multiple) inter-societal interactions (Rosenberg 2013, 185) and simultaneously highlights the unevenness of these connections. Thus, the international is composed of a variety of interconnected societies that interact at different levels, scales, and speeds, and, through these interactions, they constitute the international in its societal and geopolitical multiplicity.

We embrace this sociological understanding of the international, which neither reduces international phenomena to geopolitical structures based on inside–outside distinctions of entities nor focuses on processes with global reach, such as capitalism or climate change. Discussions of global capitalist dynamics, for example, show how capitalist forces (such as commodification, monetarization, and wage labor) penetrate and transform societies and then attend to how these transformations expand across societies. Thereby, they overlook how existing inter-societal connectivities shape how capitalism unfolds (Rosenberg 2013, 208–9). Rosenberg (2013) did not, however, pay much attention to the materiality of the international or the infrastructures that enable interactions and forge uneven connections. Building on Rosenberg's theorizations of the international, Acharya and Buzan (2007) point to the significant influence of steamships and highways in minimizing geographic obstacles and rapidly intensifying connections, albeit they too do not analyze infrastructures.

Overall, various theoretical traditions within IR acknowledged and studied, either explicitly or implicitly, the presence of infrastructures at critical junctures in the history of the international system but overlooked their forcible role. In the remainder of our article, we point to the generative and agentic role of infrastructures in shaping both societal distinctions and the unevenness between them. We, therefore, argue that infrastructures co-constitute the international as a distinct social realm characterized by uneven multiplicity. Infrastructures are, as we show, more than epiphenomena of societal interactions but are crucial for the way these interactions unfold constituting and transforming uneven socio-spatial and scalar relations.

By pointing to the agentic role of infrastructures, our article contributes to the body of research that carves out new conceptualizations of the political and international, including a deeper engagement with their material sides (Salter 2013; Walters 2014; Squire 2015; Schouten and Mayer 2017; Barry 2020). We engage with and build on this body of research, synthesizing key insights while we show how infrastructures draw the focus on the intersection of mobilities and materialities.

Order(ing) Effects of Infrastructure

This section uses infrastructures as a lens to question ontological assumptions and concepts of the IR discipline. Infrastructures are composed of technological, social,

ideological, architectural, and regulatory features, and while they connect things, people, narratives, substances, scales, and systems, they facilitate and direct movement. Infrastructures, therefore, provide a nearly paradigmatic example of ontological multiplicity. Infrastructures are made of many different elements, and while they are "drawing things together without centering them" (Law 2002, 2), they emphasize what Law (2002, 2) identified as the "fractional coherence" of objects. Despite their multiplicity, infrastructures are assembled into a coherent whole as, for example, electricity grids, water systems, or roads, and thereby produce singularity out of multiplicity. Paraphrasing Law, we show that infrastructures themselves, through their ability to draw things together and order movements, contribute to the making of (fractional) realms that eventually cohere and become singular.

If infrastructures condition mobility and human organization at different scales, then we need to ask what this implies for scholarly understanding of international order. Bull, among other scholars, has significantly shaped the discipline's understanding and core concern with international order. Bull (2002, 19) defines international order as "order among states" and "a pattern of activity that sustains the elementary or primary goals of the society of states, or international society" (Bull 2002, 8), with those goals being the preservation of the system and society of states itself, the independence of individual states, and the preservation of peace. In other words, order means that units (state and non-state) are arranged in a non-random fashion. The shape of this order is the outcome of these units interacting and managing their relations building on norms and regulations developed over time. Interactions can vary from peaceful to hostile, domination to independence, and non-relation to integration. Based on this understanding, IR scholars have been concerned with theorizing changes in the international system (Ruggie 1998; Legro 2005; Buzan and Lawson 2015; Lawson 2016; Owen 2021). Whether these changes are caused by transitions of power (realism) or increased interdependence and transnationalism (liberalism), they nearly always, as constructivists have elaborated, change the ideational underpinning of the international structure and shape the inter-subjective identities of its dominant actors (Ruggie 1998; Wendt 1999).

What is the role of infrastructures in all of this? Borrowing from research on the materiality of the international, infrastructures are not just materials to be used, but are deeply imbricated in the way we make sense and provide meaning to the world. Rationalists argue that actors' positions in that international system are products of material structures. Constructivists would view infrastructures as such material structures but show that they come into being through social interactions, where these material matters are constituted out of meanings that the main actors bring to their interactions. Nevertheless, international relations, we argue, are a product of how things—materials, bodies, ideas, and knowledge—are brought into relations with each other, assembled, and positioned in the process of arranging space, sequencing time, and coordinating movements. Material-technological-spatial-temporal-social assemblages then generate ordering effects, as they make the mobile appear static (Thrift 2006; Steinberg 2009).

We argue that it is this ordering effect—i.e., the appearance of the world as composed of static, stable, and non-random units—that infrastructural installations facilitate and enable. Mobilities, as Sheller and Urry (2006, 210) emphasize, are shaped by immobilities and infrastructural moorings. Let us take the example of modern water dams, which are massive concrete installations constructed to interrupt and direct the flow of water. While a dam is constructed to minimize flooding and to produce energy, it repurposes water through channeling, storing, and redirecting—that is, ordering flows (Strang 2021, 51). Beyond the massive and seemingly static water barrier, a dam is composed of machines, pumps, tunnels, switches, cables, and pipes that store and direct the movement of water and energy to farms, factories, households, animals, and humans. The building of a dam often

leads to the displacement of human and non-human life forms, along with the destruction of flora and fauna, due to changing water levels even at a far distance from the dam. Displacements from the dam site are contrasted with labor movement in the direction of the dam. Dams are connected to roads as people and materials need to be transported to the site for construction, maintenance, leisure, and related business activities. A water dam, thus, is a complex infrastructural assemblage composed of enclosures (containments) and connections (mobilities) that rearrange nature and produce space through directing and sorting flows and movements, following extractive and commercial logics. By moving through the dam, previously messy flows are now "ordered and organised, calculated, and rendered unambiguous" thus displaying the same effects that Mitchell (1991a, 13) attributed to states.

States resemble dams. Both are composed of multiple, overlapping, and densely networked infrastructural assemblages. States, like dams, appear as coherent and static wholes, even though they are undergirded by material movements within, across, and beyond them. Many of these movements are relegated to the background and go unnoticed; the gaze is directed toward gigantic, concrete material fixes, and the movements that are now enabled and directed in an orderly fashion. Like the water that now moves through the holes (floodgates) in the concrete barrier or is redirected via pipes to farms, people and goods move in an orderly fashion through established holes (border crossings and airports) in state barriers (borders). States facilitate, interrupt, and redirect or, in other words, differentiate, regulate, and control movements of policies, capital, labor, humans, money, goods, etc. The modern state is carved out and separated from the unequal inter-social relations, a separation that is rigidified through immobilization and interruptions of movements (Holloway 1994, 27, 31), which eventually make the state appears as a prime unit and driver of these movements. Holloway (1994) emphasized sociopolitical interruptions, such as flag ceremonies, anthems, and discriminatory migration practices. These practices are interwoven in infrastructural fixes that constitute the state as bounded and static. As infrastructures expand connectivities and densify interdependencies, they also repurpose and direct mobilities, connect and compartmentalize, straighten, and correct. Roads, for example, make movement more efficient but also limit where to go and shape historical trajectories by producing both mobilities and confinements (Tsing 2005, 6).

This view extends to our theorization of the international as an ontological multiple. Infrastructures make the "fractional coherence" (Law 2002, 2) of the international visible, as they co-constitute it as a realm that "cannot be caught within or reduced to a single dimension" (Law 2002, 3). The international cannot be dissolved into other "separate and independent dimensions"—such as the national or the global. Instead, infrastructures make visible the fractional coherence of these realms, which are separated through connections and oscillate "between plurality and singularity" (Law 2002, 3) while they are simultaneously dislocated fragments (Law 2002, 4). As such, these realms are continuously evolving.

Due to their scale and solid materiality—often comprising tons of concrete, steel, iron, sand, water, and copper—infrastructures, once established, tend to endure. Infrastructures display enormous "obduracy" (Law 2001) and "recalcitrance" (Bennett 2010, 1). They forge pathways and routes (and thus distinctions) to be used for decades, if not centuries. It is, therefore, not surprising that contemporary infrastructures in the Global South are built on the ruins of colonial infrastructure (Enns and Bersaglio 2020; Aalders 2021). From an infrastructural lens, the building of European empires can be read as a series of infrastructural megaprojects that served a dual purpose: extracting resources and enabling territorial control. Infrastructures were crucial to move violence and knowledge necessary for these extractivist endeavors and to put resources into the colonial service (Headrick 1981; Smith 2021). These infrastructures not only forged a denser array of intersocietal connectivities, thus redirecting and repurposing movements between societies, but

also cut through and differentiated these societies into communities, tribes, ethnicities, and kingdoms. Bose (2009), for example, showed how European powers transfigured and violently re-ordered long-established inter-societal maritime networks that constituted the Indian Ocean as a distinct (international) realm composed of maritime interlinkages among coastal societies and their respective hinterlands. In Tanzania, the German railway replaced a porter-based long-distance trade network and introduced a racially differentiated system of "free" labor (Karuka 2019, 40). On the Indian subcontinent, colonial infrastructures were used to destroy existing manufactures and industries, violently eliminating economic and political competition, and shifting the focus from production toward extraction of raw materials. The building of roads and rail networks necessary for the extractive endeavors was then paid for by the colonial subjects through the blatant and racist exploitation of their bodies and labor power (Tsjeng 2020). Railroads not only carried enormous devastation across the colonial world, but also opened the colonies to the inflows of "idle" European capital and debt (Karuka 2019, 40–4). In this vein, political economists have studied how foreign investments in infrastructures in the Global South correlated with colonial relations, thus pointing to relations between economic ties and international conflict (Frieden 1994).

More contemporary technoscientific and logistic innovations, such as the development of the container along with new forms of computerized modeling, further standardized circulation and reduced circulation time (Levinson 2016). The expansion of containerized trade, together with the rising importance of petroleum, has, in the last decades, continued to transform oceanic rims by densifying connectivities between an array of societies, pushing, for example, the Indian Ocean networks far beyond their colonial and early postcolonial boundaries (Prestholdt 2015). Today's boom in infrastructure facilitates new possibilities but also seems unable to shed off its colonial moorings, as illustrated in the continued pathologizing of Africa (Kimari and Ernstson 2020). Looking closer into infrastructures as "matter that makes matter move" (Larkin 2013, 329) helps in disentangling these relations and their effects. Infrastructures encourage the exploration of ordering practices as they emerge from and through these assemblages (the arrangement of things) and at the intersection of materials (installations and spatial fixes) and mobilities (differential circulation and flow of matter). These developments point to the close intertwinement of ordering and knowing, as infrastructures shape the way we render the world legible and knowable. The focus on infrastructure, therefore, encourages scholars to trace, as Bueger (2015) suggests, how "things" like states or wars are produced. Emphasizing materials and movements also suggests an epistemological shift from the focus on order in IR to ongoing practices of ordering that are deeply immersed into materials that foster, contain, differentiate, and direct movement—thus into infrastructures.

Infrastructural Crafting of States and Beyond

Building on Rosenberg's conceptualization of the international as an uneven inter-societal realm that emerges through multiple interactions, we point to the agentic role of infrastructures in shaping societal division and uneven interactions. Thus, we postulate that infrastructures have a constitutive role in rendering distinctions and differentiations legible as units, states, societies, and communities. Infrastructures are themselves composed of competing dynamics. On the one hand, infrastructures forge distinctions that constitute the international as a multiple, radically uneven, but also distinct inter-societal realm. On the other hand, infrastructural connectivities erode established distinctions, including the units they once helped to differentiate—thereby jeopardizing the international order. Moreover, infrastructures push for standardizations and homogenizations that transform established structures of unevenness. For example, the powerful rise of new "entities" from

Southeast Asia—be it regions, states, or cities—is, among others, due to their capacity to facilitate maritime trade. Several "ascending powers" host global shipping, port, and logistic companies.[4] As up to 80 percent of global trade is transported by sea, maritime infrastructures are a crucial component of societal interactions that shape international structures.

The political science and IR literature on infrastructure is largely inspired by Mann's (1984) notion of "infrastructural power," which he considers to be crucial for the establishment of distinctions, in his case between state and society. For Mann, infrastructures are composed of a set of standardizations (literacy and alphabet) and materials (roads and books) that, together with a particular form of social organization (the division of labor), provide the state with the capacity to roll out its coercive and bureaucratic power, penetrate society, and "implement logistically political decisions throughout the realm." Infrastructural power thus crafts a "unified territorial reach" (Mann 1984, 189, 199), building the state as the unity of territory and people while simultaneously setting the state as autonomous from society. The separation of states was executed through infrastructures, with borders giving states their physical form. Representations in the form of maps underscored imaginaries of separation and sovereign statehood (Denman 2019, 233). The depictions of the state as a cage (Mann 1986)[5] or "container" (Giddens 1985, 13) point to this material dimension of power.

Scott (1998) advances Mann's understanding of infrastructural power. He too sees infrastructures as conduits of state power but additionally emphasizes how these make the world legible in state-centric ways.[6] For Scott, infrastructures not only provide the state with a physical structure to penetrate societies, curb resistance, and standardize them as national units, but also to generate and diffuse a state-centered (govern)mentality. This diffusion takes place through governmental techniques that discipline space as they reduce diversity through abstraction (maps and metrics), simplification (standards and grids), and universalization (quantification and statistics). Guldi (2012) lays out how the British government initiated its first large-scale road project in the nineteenth-century conquest of Scotland. To work on this project, militaries, engineers, and surveyors were deployed and used new methods and tools to plan "roads of territorial complexity [. . .] laying new lines across varied landscapes [. . .] proceeding in as direct a fashion as possible" (Guldi 2012, 30). Road building required a massive labor force, mainly soldiers, given unruly Scottish lands. Violence, therefore, became an intrinsic part of infrastructural crafting of states. Although soldiers were later replaced, the civil workforce continued to be organized militarily, divided into highly organized groups with specialized tasks working parallel at different locations and in a defined set of hours (Guldi 2012, 45). Over the years, civil engineers and builders established general standards and used quantifiable metrics to eliminate local variance and altered "landscapes without regard for local social or environmental contexts" (Guldi 2012, 78).

Infrastructures act on the physical and social environment in which they are installed. By enabling circulation and increasing the efficiency of movements, they perpetuate an abstract, calculative, and instrumental logic. Lefebvre (2002), Anderson (2006), and Scott (1998) have shown, from various disciplinary perspectives, how infrastructural crafting of states initiated processes of standardization and homogenization. These "state simplifications" (Scott 1998) render messy relations manageable while configuring the social, built, and natural environment. Similar to

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[4]Today, five port operators control 50 percent of the containerized trade through ports. Their headquarters are in Singapore, Hong Kong, China, the United Arab Emirates, and the Netherlands (Ziadah 2023, 51).

[5]Mann sometimes talks about a territorial cage as well as a social cage to denote the increasing "containment of human beings behind clear, fixed, confined social and territorial boundaries" (Mann 1986, 38).

[6]Scott does not use the term "infrastructure," but speaks about roads, railroads, sewers, cables, and aligned maps and plans as ordering devices.

the dams described above, states order things, people, and landscapes, and in doing so, "state space subordinates both chaos and difference to its implacable logistics" (Lefebvre 2002, 99). Infrastructures, however, provide the technological devices for this ordering while they give states their form and underscore their static physicality until they appear as self-regulating "distinct, disjoint, and mutually exclusive territorial formations" (Ruggie 1998, 172). Like the material mobilities they enable, infrastructures are rendered inert and relegated to the background of governmental relations from where they co-produce the distinctions they helped in forging, such as the separation between states. Movements between these entities are scrutinized, but entities and distinctions themselves appear as self-evident, such as the distinction between citizens and foreigners, internal from international trade, etc.

Infrastructures also create dense webs of interactions with new types of agencies that constantly remold states and societies while recalibrating the distinctions that constitute the international. For example, the current containerization of seaports across Africa is speeding up circulation and densifying the integration of the African continent into global trade and supply networks (Anthony 2013; Cafiero and Cok 2020; Ziadah 2023). Port developments initiate a series of further infrastructure projects, including transport corridors, roads, pipelines, railways, electricity, and communication networks. These infrastructures connect ports to wider hinterlands, where "new towns" are "built up from scratch" or existing cities are revamped as "comprehensively planned self-contained enclaves" (Noorloos and Kloosterboer 2018, 1223). Contemporary infrastructure projects, therefore, initiate spatio-political transformations (Schindler et al. 2019, 2) and point to ongoing reconfigurations of both statehood and territoriality, which is likely to take different forms depending on existing inter-societal imbalances and geopolitical multiplicity.

The sheer complexity of these infrastructural assemblages seems to challenge, escape, or bend state regulations and control; most obviously when e-commerce giants like Amazon or Google bypass national labor regulations and taxation in sophisticated ways, just as the international shipping industry uses flags of convenience to take advantage of national differences in wages, safety standards, and labor rights (Ziadah 2023, 51). Infrastructures and aligned computing innovations and technologies, such as machine learning and algorithms, dramatically increase the velocity and range of circulation providing new means for the control of mobilities as they make human and non-human bodies susceptible to new technologies of calculation (Amoore 2013). Such contradictory dynamics—accelerated circulations and new forms of containments—contribute to a heterogenization of spaces and proliferation of scales across the globe (Amin 2002, 387). The amplification of these contradictions, as Mezzadra and Neilson (2013) argue, makes spaces and scales notoriously unstable. The task of IR scholars is then to "theorize with th[is] unfixity" (Epstein 2013, 501) and so, we add, an ontological unfixity that is often amplified by enormous material fixes.

Infrastructural crafting, thus, co-constitutes a world composed of coherent territories with claims to sovereignty, but the very same world is now undermined by political dynamics that infrastructural densification unleashes. Two spatial figurations, cities and zones, gained renewed scholarly interest in this respect. Cities position themselves as nodes and infrastructural connectors, facilitating, managing, and governing interurban flows and mobilities (Sassen 1991, 1996). Global cities operate with an increasing degree of independence from the state (Sassen 1991; Abu-Lughod 1999; Curtis 2016) and, therefore, transcend and re-scale state spaces (Brenner 2017). While states emphasize enclosure, global cities direct the gaze to their constitution as nodes, crisscrossed by a multiplicity of networks at various scales.

Zones emerge as an important component of urban transformations across the planet. It is a dominant spatial technology for the sweeping overhaul, rapid expansion, and unequal densification of capitalist circulatory systems (Ong 2004;

Easterling 2014). Zones push the integration of production and circulation into what Tsing (2009, 148) labeled "supply chain capitalism." Although zones circumscribe "designated physical areas" (Bach 2011, 100), they are characterized by distinct regulations from states or cities in which they are located while giving rise to new logics of power (Mezzadra and Neilson 2013, 205–42). The tension between capital's driver to transcend all boundaries and states' tendency toward enclosure leads to a—partial and often temporary—decoupling of sovereignty from the state, as evident in military humanitarian frontiers (Weizman 2007; Smirl 2015; Bakonyi 2022), immigration detention centers (Mountz et al. 2012; Mainwaring and Cook 2018), off-shore wind parks (Moehlecke et al. 2023), oil rigs (Appel 2012), and deep-water resource exploitation (Watts 2019, 842). Above all, the government of these flows is both internationalized and localized in particular places, comprising what Easterling (2014) calls "extrastatecraft," thus forms of government beyond national imaginaries.

Infrastructures are also significant enablers of state internationalization (Schlichte 2017) aiding governments to act from distance and infuse their logic in places far beyond their "own" state. Infrastructures are active in re-scaling and de-territorializing, a process that does not necessarily replace the state but changes the state's dominant form. Governments have historically been the major investors in infrastructure and continue to play a major role as they mobilize space through planning, investment, and policy (Chua et al. 2018, 622). Ong (2000, 2004), in her analyses of zoning technologies in East Asia, emphasizes how states experiment with variegating and graduating sovereignty to remain competitive on the global market. States, in her examples, relegated some governing functions to foreign corporations, a move that involved a redefinition of citizenship as the productivity of population groups started to determine their socio-political privileges. Both the prominence of the state and its entanglement with industries are also visible in the role that state-owned companies play in the current development and modernization of maritime ports. Two of the top five global port operators, the Chinese company COSCO and the Dubai Port World based in the United Arab Emirates, are either state-owned or closely aligned with a government, and both invest heavily in ports among other infrastructures and logistic networks in the Global South. Governments may use infrastructures to improve their position in the international hierarchy of states (Ziadah 2023, 53–4). Studying IR through the infrastructure lens facilitates an understanding of the mutual transformation of state and infrastructure while emphasizing the tension between the capitalist push to eliminate barriers to speed up circulation and the impulse of states to control, direct, or contain movements. In other words, infrastructures are at the heart of contention between dynamics of crafting the unevenness between societies that constitute the international on the one hand, and contributing to boundary erosions, driven by an expansionist capitalist logic, on the other hand.

Infrastructural crafting of both states and commercial actors contributes to "hegemonic ordering across different scales" (Nexon and Neumann 2018, 662). We attended to the rise of global cities, the spatial fragmentation of sovereignty through zoning technologies, and the potential effects of infrastructural crafting by states and commercial actors, even though the latter are not always easily distinguishable. These forms of engineering point to the continuous making of international (and other) relations through movements and fixtures, connections and disruptions, and material and ideational crafting. The argument is, therefore, not that infrastructural connections become so dense that states will decline or disappear, but that infrastructural junctures are embedded in governing arrangements that rescale and blur entrenched scalar distinctions and challenge the doxa of (binary) spatial metaphors, such as local versus global, bottom-up versus top-down, inside versus outside (Swyngedouw 1996). Infrastructures, therefore, open ontological and epistemological assumptions in the IR discipline to empirical inquiry and invite multi-

scalar and multi-locational analysis of flows and fixes that render units and scales legible.

Infrastructures and Meaning-Making

Max Weber (1948, 280) compared ideas to "switchmen" who work the railroads that determine the tracks along which actors behave and make decisions. If ideas are like switchmen on railroad tracks able to change the course of the train, infrastructures are the switches through which meaning and ideas evolve, transform, and decline. The train, however, could not move without either. In this section, we reflect on how infrastructures are saturated in meaning, the latter broadly understood as including ideas, imaginaries, norms, identities, and beliefs.

While IR scholars have acknowledged the intersection of ideational and material elements in the international, they conceptualize both as distinct, as standing "in a relationship of externality to each other" (Barad 2007, 152). Constructivists, for example, focus on the way objects are embedded in ideas and identities, and how actors come to view their interests in a world that does not necessarily have a reality beyond human representation. It is through human interpretation that objects are given meaning and value. A materialist understanding of meaning, however, takes a different angle as it acknowledges that human interpretation is mediated by materials and thus "infused with, effectuated and communicated through the technical or material milieu" (Schouten and Mayer 2017, 312). Appel, Anand, and Gupta (2018 25) emphasize how materials such as "concrete, steel, copper" are central to the "sensory, somatic, and affective ways in which we inhabit this world." Infrastructures are crucial in the generation of political imaginaries, as the literature on borders has demonstrated (Brown 2010; Lebuhn 2013; Goettlich 2018; Linebarger and Braithwaite 2020; Dijstelbloem 2021; Ozguc 2021). After all, it is beyond the fence where civilization ends and violence can be freely applied (Brown 2010, 45). Infrastructures are but one aspect of the material milieus that mediate human experience, but they carry enormous symbolic significance promising connectivity, integration into markets, political networks, and supply chains, and seamless circulation and consumption. They raise hopes and desires, and are thus aspirational, imbricated in affects, and generative of emotions.

Scholars have emphasized that infrastructures are not only generative of space but also of time and, therefore, provide meaning to modernity (Davies 2021, 741). They determine the rhythm of interactions and create a relationality that no longer aligns with the rhythm of nature, ignoring, for example, day/night shifts or seasons. Steamships overcame the rhythm of tides, currents, and winds. Railways gave rise to a "railway time" and led to the designation of standard times and time zones in the 1880s and 1890s (Joyce 2003, 14). By inserting and expanding calculative logics, infrastructures co-constitute spaces as abstract and time as homogenous (Benjamin 1968, 261) while promoting linearity, standardization, and simplification. With the imperial advancement of Europe, a modern notion of history emerged that was initially based on emptying time and space from their singularities and then arranged into a universal "world-historical framework" (Giddens 1990, 20). Previously discrete and parallel local histories were integrated into a singular world history, which considered the totality of humanity as its subject (Koselleck 2004, 194). History itself was temporalized (Koselleck 2004, 256) and interpreted as "history by itself," as an ongoing, directional, irreversible, and progressive movement of time. It is, therefore, not accidental that the nineteenth-century infrastructural boom was accompanied by epistemological transformations embedded in "ideologies of progress" as well as ideas of modernization and development (Buzan and Lawson 2015, 97–126), described by Harvey and Knox (2012) as secular forms of enchantment characteristic of modernity.

While these narratives united mankind (humanity), the newly created historical unity was immediately divided along the axis of progress and hierarchized between developed and undeveloped places, races, and cultures. Measures of connectivity and "technological sophistication" were used to substantiate these divisions (Appel, Anand, and Gupta 2018, 7). It is hardly surprising that many early postcolonial states immediately embarked on a path toward infrastructure-led development. Driven by ideas of development and progress, the infrastructural boom in the 1960s and 1970s was also supported by extractive industries and Bretton Woods Institutions (Mold 2012), pointing once more to the infrastructural intersection of political and economic power. In the contemporary infrastructural boom across the Global South, narratives of nationalism are once more blended with discourses of empowerment, development, and modernization (Cupers and Meier 2020; Chiyemura et al. 2022; Karrar 2022). Infrastructuring in the South, therefore, often remains embedded in a "developmental time," the promise to catch up and to reach "material equality in a profoundly unequal world" (Appel 2018, 59).

Several scholars have meanwhile taken up how infrastructures project societal visions and become sites of social struggle over values, meanings, and identities (Latour 1996; Mort 2001). Infrastructures, for example, play a central role in the imagination of state spaces promising both political integration and economic connectivity fostering nationalist ideologies and emotions (Guldi 2012; Harvey and Knox 2012; Merriman and Jones 2017; Kurtiç and Nucho 2022). Grand infrastructures advanced into a symbol of state strength, producing and garnering nationalist feelings. Their construction demonstrates the ability to mobilize political will, financial means, and planning and engineering capacity (or knowledge) to tame nature, control space, and cultivate uncertainty. Dams can serve once more as an example of the way infrastructures are vital in the evolution of national feelings. Built in 1935 in Nevada, the American Hoover Dam, at the time among the largest ever built concrete constructions, canvassed for its ability to "make the desert bloom,"[7] advanced into a double symbol for the limitless abilities of humans to tame, change, and improve nature and for the rise of the United States as a great power. Even now, both can be sensually experienced by US citizens and visitors at the dam site. The dam also became an aspirational model that was replicated in many other countries, including Australia, China, South Korea, India, and the former Soviet Union (Strang 2021). More recently, and long before it was finalized, the Grand Ethiopian Renaissance Dam (GERD) triggered the rise of Ethiopian nationalism (Abdelhady et al. 2015; Gebresenbet and Wondemagegnehu 2021; Grandi 2021). It is presented as Africa's largest power plant and one of its biggest water storage facilities,[8] and as being built without significant external funding. The dam promises to end water shortage across the country and symbolizes Ethiopia's progress toward becoming a middle-income economy. The GERD's change of the flow of the Nile River thus intersects with political power as it rearranges the hydro-social and hydro-political relations in which the river is embedded. The expectation of widened access to water and electricity connects the dam and its flows (water, electricity, and labor) with more distant bodies and materials. The infrastructural project has thus become part of an affective regime that gathers national feelings in Ethiopia and bridges societal divisions, demonstrating that access to electricity, water, and other basic services are part of the "prosaic or mundane manifestations of stateness in everyday life" (Merriman and Jones 2017, 605), while disruptions and absence are interpreted as state malfunction or neglect (Harvey 2021b).

Infrastructures insert themselves into and reshape the environments in which they are embedded, transgressing the division between the natural and technolog-

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[7]"They Died to Make the Desert Bloom" is engraved in a monument in honor of the ninety-six people who died during the construction of the Hoover Dam.

[8]Being the largest, highest, and best became a crucial part of modernist state imaginaries, framing progress as grandness of the craft, knowledge, engineering of, and control over nature.

ical, the material and ideological. Pritchard (2011) provided an in-depth examination of the enviro-technical landscape of the Rhône River in France and showed how its technological transformation and increased utilization for energy generation after 1945 provided new meaning to the French nation and the reconstruction of its position in Europe and the world. Pritchard also contributes to the emergent body of research that investigates electricity as conduits of (state) power (Lochery 2015; Jenss and Schuetze 2021), alongside the considerable body of research that analyzed the relationship between water infrastructures and political power (Kooy and Bakker 2008; Linton and Budds 2014; Akhter 2015; Strang 2016, 2021). Infrastructure development can contribute to the production of homogenous and integrated state spaces aligned with national sentiments. It can, as others have outlined, also foster regional and place-based differentiations (Akhter 2015), lead to the graduation of sovereignty, and territorialization of stigma, and reproduce or reorganize social hierarchies (Wacquant et al. 2014; Zarakol 2017).

However, most of the research on infrastructure and meaning-making is state- or city-centered reifying established boundaries and scales. Few scholars have attended to the international. Rivers, however, are usually not stopped by state boundaries, and neither the relation of water and power nor the affects and emotions water infrastructures generate, remain within state boundaries. Water flows restructured by the GERD in Ethiopia, for example, unfold their agentic power in regional scaling, creating a new "fault line" and rebalancing relations of power between upper and lower riparian societies and states in the Nile basin (Gebresenbet and Wondemagegnehu 2021). The GERD shifts existing balances of inter-societal relations and creates a new unevenness that is associated with risks for lower riparian and opportunities for upper riparian societies. The expectation of reduced water accessibility in lower riparian states has stimulated debates over Egypt's national identity, which was hitherto strongly aligned with the control of the Nile water. It also invited reflection and reconsideration of Egypt's role in the region (Nasr and Neef 2016; Gebresenbet and Wondemagegnehu 2021). The dam changes the circulatory mechanisms through which power flows and with it the patterns and meanings in relational configurations and hierarchies of states.

Some scholars have shown how infrastructures provide the material backbone for identifications beyond state boundaries. Historians of science and technology, for example, examined the various forms of "infrastructural Europeanism," where infrastructural practices of circulation pushed narratives of a united Europe, thus forging visions for a common European identity (Misa and Schot 2005; Schipper and Schot 2011; Klimburg-Witjes and Trauttmansdorf 2023). The ontological multiple of this infrastructural crafting resulted in the formation of a distinct European realm through "technologies, systems, and standards [that] provide a material, institutional, and cultural foundation for Europe" (Kaiser and Schot 2014, 1).

The way infrastructural developments initiate struggles over the meaning of the international is showcased in China's BRI and the associated debate on China's rise as a global power. The BRI, a product of grandiose spatial fixes aimed at redirecting movements, is embedded in, and has produced new geopolitical imaginaries. Most prominent depictions of the BRI are those of an emancipatory model of development, a civilizational continuation of China's past, or a geopolitical gambit for global domination. Nevertheless, the BRI does not exist as singular but involves complex and contingent processes of infrastructure building that produce contradictions, incoherencies, and uneven interactions between a large variety of agents, environments, ideas, and identities at different scales. Henceforth, the meanings and narratives that pre-date and accompany the building of the Belt and Road infrastructures are multiple and changing as constructions unfold.

The BRI has generated multi-temporal imaginaries among political elites in China, who re-imagine China's past position in the world as they narrate "nostalgic futures," including the promise of "making China great again." Such narratives

emphasize China's peaceful infrastructure development in support of economic growth portraying China as a "new trailblazer of global capitalism," one that does a better job than the United States (Nordin and Weissmann 2018, 232). In academic and policy circles, the BRI gave rise to discussions of how China's power trajectory is transforming the geopolitical hegemony of the United States promoting a multipolar global order (Benabdallah 2018; Ho 2020). Another geopolitical imaginary focuses on the South–South connections, emphasizing how the BRI promotes connectivity, trade, and profit beyond dominant routes established in the interest of "the West" (Wang and Elliot 2014; Noort and Colley 2021), thus challenging colonial infrastructural power that undergirds geopolitical and epistemic Eurocentrism. Others point to the dangers of domineering by China, especially when it comes to loan-based financing of infrastructure, which is indebting receiving countries (Alves 2013).

Infrastructures stimulate a range of geopolitical imaginaries, most of them depict the international order in state-centric terms and give rise to speculations about the future of hegemonic orders either challenging domination by the United States or questioning China's intentions portraying it as a danger to the liberal world (Noort and Colley 2021). States are sometimes grouped into blocs, be it a (declining) colonial West or (ascending) global Asia. Independent of their Eurocentric or emancipatory drive, these narratives reproduce the pervasive geo-epistemological labeling that naturalizes the connection between thought and bounded spaces (usually states) (Barkawi et al. 2023) and ignores the multiple inter-societal connectivities and new forms of compartmentalizations that infrastructural developments promote.

We suggest that a multi-spatial and multi-temporal analysis of actors, materials, and movements engaged in infrastructure development along (proposed) routes of the BRI would increase scholarly understanding of the complexity of meaning-making and allow the investigation of state-society and inter-societal relations rather than assuming coherence of state and thought. As infrastructural power unfolds, it constitutes and transforms predominant scales, also by increasing the ability of local political elites and economic entrepreneurs to directly engage and cooperate with actors elsewhere. China's massive infrastructuring might empower corporate and regional actors, stimulate competition, and further fracture national cohesion (Hameiri and Jones 2015). State-based enterprises, as well as private Chinese contractors, have a significant influence in the planning and building of infrastructures (Goodfellow 2020). Nationalist interpretations often fail to pay attention to the extent to which the uneven development of infrastructures unfolds across societies at different scales and co-produces interactions that do not easily fit into the imaginaries of neatly bounded state spaces.

Goodfellow (2020) explored how BRI infrastructures "hit the ground" in Eastern Africa. The authors emphasized that infrastructure developments were to a much lesser extent influenced by grand geopolitical visions than by daily encounters, negotiations, and the bargaining power of a large range of actors from different countries. Rather than strictly following state ideology, Chinese firms—state-based and private—were looking out for profitable opportunities as they interacted with and adapted their strategies to responses of African governmental and private players who also seek opportunities. Infrastructuring, that is, the planning, designing, negotiating, building, and maintaining of infrastructures, emerged as a multi-sited and temporally layered (rather than linear) process. Megaprojects, such as the BRI, therefore, produce multiple meanings and generate effects beyond the intentions of their planners.

The narratives that emerge around the BRI and other infrastructure megaprojects often feed into divisions of a developed versus underdeveloped world, the former depicted as displaying agency, the latter merely as "beneficiaries" of Chi-

nese, European, or United States investments.[9] Infrastructure investments in Africa are regularly depicted as a "new scramble," pointing to a repetition of the continent's history of colonization, foreign domination, and exploitation. While infrastructures are embedded in modernist notions of development, progress, and prosperity, African political elites tend to embrace the developmental models provided by different investors and counter with stories about their unique history and distinctiveness. Following meanings along infrastructural paths in the Horn of Africa, multiple and, at times, contradictory stories are blended into narratives of uniqueness (REF anonymized). Infrastructure development is constitutive of identities and imaginaries, constructing cultural affiliations and notions of belonging that align with or contest the spatial fixes at the core of current attempts at state- and nation-building in the Horn of Africa (Wan et al. 2020).

Infrastructures seem to display an intrinsic capacity to initiate ideational change; they are, as new materialists would call it, vital and agentic (Barad 2007; Bennett 2010). Infrastructures are not merely physical artefacts but also stories of political significance. The political life of infrastructures is about who gets to tell the story of infrastructures and dominate its imagination at a particular time and place. Agents find creative ways to breathe life into stories of infrastructures, including the production of geopolitical imaginaries. Infrastructures, however, breathe back as they embody, appropriate, and enact political effects while molding human and non-human mobilities forging processes of identification and belonging. While infrastructures undergird the expansionist power of, for example, actors from China, contemporary infrastructuring deepens existing connections and calibrates new ones while disconnecting others, leading to new types of immobilities across and beyond the Global South. Infrastructures co-produce collective and individual identities, or as Cowen (2017) eloquently puts it, "'We' build infrastructure, and it builds 'us'." The outcome of this massive engineering is yet to evolve.

Conclusion

This article invited the use of an infrastructural lens to study the international and argued that international relations cannot be properly understood without attention to the materials through which they unfold. We outlined that infrastructures provide the scaffolding for societal interactions, mediate relations between societies, and give the international its specific form. We drew attention to infrastructural standardization of movements and showed how they follow extractive and commercial gains while inserting calculative logics in interactions between humans and between the human and the non-human world. Infrastructures bring to the fore how material practices are inscribed in and themselves produce relations of power while being vested in promises and dreams. As infrastructures expand and accelerate connectivities and densify interdependencies, they repurpose, direct, and filter mobilities. In short, they are among the most "fundamental 'ordering mechanisms' of societies" (Strang 2021, 50).

Infrastructures draw our attention to the dialectic interplay of materials and mobilities. They unsettle ontological depictions of an international order that is horizontally composed of singular and monolithic entities (state or non-state) and arranged alongside vertical scales emanating from and nested above or below the state. The state itself, as we have shown, emerges as an effect of infrastructural crafting—continuous and massive forms of engineering that choreograph mobilities while holding things and people in place and simultaneously aligning identities with these spaces. Infrastructures emphasize connectivity and distinction, connect

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[9]The depiction of active and passive countries is not only promoted by Western countries but can, for example, also be found in Russian media. They predominantly portray China, Europe, India, or Russia as active, while, for example, Kyrgyzstan, Kazakhstan, and Pakistan are depicted as passive recipients of Chinese benefits (Kuteleva and Vasiliev 2021, 596).

and disrupt, accelerate and slow down while delineating boundaries between overlapping formations with intersecting scales. The focus of IR is, however, placed on the (grand) material fixes, assuming a static and coherent physicality of entities with clear inside–outside distinctions, where the discipline became conventionally focused on exploring the (outside) relations between these entities. The mobilities that create and maintain these fixes are often rendered invisible. Looking at the international through infrastructures challenges the modern view on fixity and questions the static way of thinking about international relations. Building on Rosenberg's emphasis on uneven and combined inter-societal relations, an infrastructure lens underscores the ontological multiplicity of the international and explores how these relations simultaneously unfold at multiple scales and different speeds, tracing the dialectic tensions of materials and movements.

Looking at the international through infrastructures invites explorations of uneven socio-spatial-material assemblages through which movement is enacted and relations are formed and ordered, by looking at scales and enclosures they constitute at historical conjunctures. The current infrastructure boom opens ontological and epistemological groundings in IR to empirical inquiry. Infrastructures draw attention to the making and moving (Cowen 2014, 103; Chua et al. 2018) and materializing and becoming (William 2011), thus to a processual understanding of the international, which pushes IR beyond the grand nationalist and geopolitical imaginaries of hegemonic powers. Instead, it invites scholars to empirically investigate actors and materials involved in infrastructuring to explore how infrastructures insert themselves in the environment, connections, and divisions that they perpetuate and the meanings that they transport at different scales and junctures of infrastructure development. Infrastructural inter-connectivity is part of how social formations evolve, which takes us back to Rosenberg's conceptualization of the international but highlights the materiality of connections and movements.

Infrastructures additionally point to the deep entanglement of state and corporate actors, as demonstrated in contemporary megaprojects in the Global South, where a variety of actors from across the globe engage in the planning, building, running, and maintenance of infrastructures. These entanglements can foster states, accompany the rise (and fall) of hegemons, reconfigure territories through zoning technologies, and intensify interconnections between (global) cities or regions rather than states. Infrastructural reconfigurations contribute to the diversification of political spaces and the emergence of a global landscape shaped by overlapping competencies, legal regimes, and regulatory mechanisms. An infrastructural lens helps decipher these heterogeneous spaces as emergent and entangled assemblages that direct the flow of materials, bodies, information, and ideas. The acknowledgment that the international landscape is never stable, but continuously produced and altered through practices of scaling and (dis)connecting, requires an adaptation of the theoretical and methodological apparatus of IR.

To account for transformations and blurring of boundaries, Salter (2015) joins Latour's (2005) quest for flat ontologies that acknowledge the role of material objects in the making of international relations. Flat ontologies accept multiplicity as they aim at overcoming dichotomic conceptualizations and instead encourage approaches that differentiate "in terms of degree rather than kind to avoid essentialist, hierarchical or binary modes of thought" (Ash 2020, 345). We suggest researching the heterogeneity of overlapping spatial formations as folded assemblages of materials and mobilities, thus to take up topological approaches that study the materialization of spaces through multiple, situated, and mobile material-discursive intra-actions, connections, and disruptions. Topological approaches explore how such boundaries between overlapping formations with intersecting scales are delineated (Amin 2002, 389; Hönke and Cuesta-Fernandez 2017; Merriman and Jones 2017, 605–6) and allow a focus on the practices of ordering and patterns of uneven socio-spatial development instead of reinforcing ontological pre-givens and priory

assumptions of order. While other authors have emphasized such approaches (Law 2002; Barad 2007), this article drew the focus to the international and scrutinized the way infrastructures constitute and provide meaning to the international as a distinct realm of social inquiry.

The IR discipline would be well suited to explore the heterogeneous and uneven spatial formations of the international in their becoming. To do so, it would have to embrace a radical openness and a "narrative indeterminacy" (Sennett 2006) that accept the transience of its dominant concepts. An infrastructural lens also attends to a radical relationality of human and non-human practices, a contingent entanglement of humans, nature, materials, objects, emotions, and histories. This relational dimension points to the way infrastructures become intrinsic parts of human organization and are embedded into social arrangements and societal structures, but also shows how they mediate and structure socio-material relations and generate effects far beyond the initial intention of their builders and planners.

In this way, infrastructures are agentic. They rearrange spaces, insert themselves into environments, and shape the ways we think, act, and feel. Scholars have already alluded to the materiality of infrastructures and the politics of materials, but we have emphasized that the particularity of infrastructures lies in their ability to make matters move, and hence, the dialectic tensions of materiality and movement. Insights of an ontological and scalar multiplicity with the evolving relationality of the international are slowly expanding in the IR discipline (Tickner and Querejazu 2021). The infrastructural lens suggests that contemporary relationalities are rather forged, wielded, soldered, cemented, glued together, and also excavated, cut, and hammered apart following extractive and commercial aims.

Funding

References

Aalders, Johannes Theodor. 2021. "Building on the Ruins of Empire: The Uganda Railway and the LAPS-SET Corridor in Kenya." *Third World Quarterly* 42 (5): 996–1013.

Abdelhady, Dalia, Karin Aggestam, Dan-Erik Andersson, Olof Beckman, Ronny Berndtsson, Karin Borberg Palmgren, Kaveh Madani, Umut Ozkirimli, M. Kenneth Persson, and Petter Pilesjö. 2015. "The Nile and the Grand Ethiopian Renaissance Dam: Is There a Meeting Point between Nationalism and Hydrosolidarity?" *Journal of Contemporary Water Research & Education* 155 (1): 73–82.

Abu-Lughod, Janet L. 1999. *New York, Chicago, Los Angeles: America's Global Cities*. Minneapolis, MN: Minnesota University Press.

Acharya, Amitav, and Barry Buzan. 2007. "Why Is There No Non-Western International Relations Theory? An Introduction." *International Relations of the Asia-Pacific* 7 (3): 287–312.

Acuto, Michele. 2014. "Everyday International Relations: Garbage, Grand Designs, and Mundane Matters." *International Political Sociology* 8 (4): 345–62.

Akhter, Majed. 2015. "Infrastructure Nation: State Space, Hegemony, and Hydraulic Regionalism in Pakistan." *Antipode* 47 (4): 849–70.

Albert, Mathias, and Barry Buzan. 2017. "On the Subject Matter of International Relations." *Review of International Studies* 43 (5): 898–917.

Alves, Ana Cristina. 2013. "China's 'Win−Win' Cooperation: Unpacking the Impact of Infrastructure-for-Resources Deals in Africa." *South African Journal of International Affairs* 20 (2): 207–26.

Amin, Ash. 2002. "Spatialities of Globalisation." *Environment and Planning A: Economy and Space* 34 (3): 385–99.

Amoore, Louise. 2013. *The Politics of Possibility: Risk and Security beyond Probability*. Durham, NC: Duke University Press.

Anderson, Benedict. 2006. *Imagined Communities. Reflections on the Origin and Spread of Nationalism.* London: Verso.

Anthony, Ross. 2013. "Infrastructure and Influence: China's Presence on the Coast of East Africa." *Journal of the Indian Ocean Region* 9 (2): 134–49.

Appel, Hannah, Nikhil Anand, and Akhil Gupta. 2018. "Introduction. Temporality, Politics, and the Promise of Infrastructure." In *The Promise of Infrastructure*, edited by Nikhil Anand, Akhil Gupta and Hannah Appel, 1–38. Durham, NC; London: Duke University Press.

Appel, Hannah. 2012. "Offshore Work: Oil, Modularity, and the How of Capitalism in Equatorial Guinea." *American Ethnologist* 39 (4): 692–709.

———. 2018. "Infrastructural Time." In *The Promise of Infrastructure*, edited by Nikhil Anand, Akhil Gupta and Hannah Appel, 40–61. Durham, NC; London: Duke University Press.

Aradau, Claudia. 2010. "Security That Matters: Critical Infrastructure and Objects of Protection." *Security Dialogue* 41 (5): 491–514.

Ash, James. 2020. "Flat Ontology and Geography." *Dialogues in Human Geography* 10 (3): 345–61.

Bach, Jonathan. 2011. "Modernity and the Urban Imagination in Economic Zones." *Theory, Culture & Society* 28 (5): 98–122.

Bakonyi, Jutta. 2022. "Modular Sovereignty and Infrastructural Power: The Elusive Materiality of International Statebuilding." *Security Dialogue* 53 (3): 256–78.

Barad, Karen. 2007. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning.* Durham, NC: Duke University Press.

Barkawi, Tarak, Christopher Murray, and Ayşe Zarakol. 2023. "The United Nations of IR: Power, Knowledge, and Empire in Global IR Debates." *International Theory* 15 (3): 445–61.

Barry, Andrew. 2020. "The Material Politics of Infrastructure." In *TechnoScienceSociety: Technological Configurations of Science and Society*, edited by Sabine Maasen, Sascha Dickel and Christoph Schneider, 91–109. Cham: Springer Nature Switzerland AG.

Benabdallah, Lina. 2018. "Contesting the International Order by Integrating It: The Case of China's Belt and Road Initiative." *Third World Quarterly* 40 (1): 92–108.

Benjamin, Walter. 1968. *Illuminations.* New York, NY: Schocken Books.

Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things.* Durham, NC; London: Duke University Press.

Bose, Sugata. 2009. *A Hundred Horizons. The Indian Ocean in the Age of Global Empire.* Cambridge, MA; London: Harvard University Press.

Brenner, Neil. 2017. "Global Cities, 'Glocal' States: Global City Formation and State Territorial Restructuring in Contemporary Europe." In *The Globalizing Cities Reader*, edited by Xuefey Ren and Roger Keil, 228–35. London: Routledge.

Brown, Wendy. 2010. *Walled States, Waning Sovereignty.* New York, NY: Zone Books.

Bueger, Christian. 2015. "Making Things Known: Epistemic Practices, the United Nations, and the Translation of Piracy." *International Political Sociology* 9 (1): 1–18.

Bull, Hedley. 2002. *The Logic of Anarchy: A Study of Order in World Politics.* New York, NY: Columbia University Press.

Buzan, Barry, and George Lawson. 2015. *The Global Transformation: History, Modernity and the Making of International Relations.* Cambridge: Cambridge University Press.

Buzan, Barry, and Richard Little. 2000. *International Systems in World History.* Oxford: Oxford University Press.

Cafiero, Giorgio, and Corrado Cok. 2020. "Troubled Waters: Ports and Power in the Horn of Africa." *The New Arab.* July 21, 2020. Accessed May 12, 2024. https://english.alaraby.co.uk/analysis/geopolitics-ports-horn-africa.

Caplan, Eric. 2001. "Trains and Trauma in the American Gilded Age." In *Traumatic Pasts: History, Psychiatry, and Trauma in the Modern Age, 1870–1930*, edited by Mark S. Micale and Paul Lerner, 57–78. Cambridge: Cambridge University Press.

Charbonnet, Francois, and Cary Siress. 2017. "Shades of Gray and Green Thumb with Out-of-the-Blue Couplings." In *Infrastructure Space*, edited by Ilka Ruby and Andreas Ruby, I–XVI. Berlin: Ruby Press.

Chiyemura, Frangton, Elisa Gambino, and Tim Zajontz. 2022. "Infrastructure and the Politics of African State Agency: Shaping the Belt and Road Initiative in East Africa." *Chinese Political Science Review* 8: 105–31.

Chua, Charmaine, Martin Danyluk, Deborah Cowen, and Laleh Khalili. 2018. "Introduction: Turbulent Circulation: Building a Critical Engagement with Logistics." *Environment and Planning D: Society and Space* 36 (4): 617–29.

Cowen, Deborah. 2014. *The Deadly Life of Logistics. Mapping Violence in Global Trade.* Minneapolis, MN; London: University of Minnesota Press.

———. 2017. "Infrastructures of Empire and Resistance." Accessed July 28, 2023. https://www.versoboo ks.com/en-gb/blogs/news/3067-infrastructures-of-empire-and-resistance.

CUPERS, KENNY, AND PRITA MEIER. 2020. "Infrastructure between Statehood and Selfhood: The Trans-African Highway." *Journal of the Society of Architectural Historians* 79 (1): 61–81.

CURTIS, SIMON. 2016. *Global Cities and Global Order.* Oxford: Oxford University Press.

DAVIES, ARCHIE. 2021. "The Coloniality of Infrastructure: Engineering, Landscape and Modernity in Recife." *Environment and Planning D: Society and Space* 39 (4): 740–57.

DENMAN, DEREK S. 2019. "On Fortification: Military Architecture, Geometric Power, and Defensive Design." *Security Dialogue* 51 (2–3): 231–47.

DIJSTELBLOEM, HUUB. 2021. *Borders as Infrastructure: The Technopolitics of Border Control.* Cambridge, MA: MIT Press.

DONNELLY, JACK. 2000. *Realism and International Relations.* Cambridge: Cambridge University Press.

EASTERLING, KELLER. 2014. *Extrastatecraft: The Power of Infrastructure Space.* New York, NY: Verso.

EGHIGIAN, GREG A. 2001. "The German Welfare State as a Discourse of Trauma." In *Traumatic Pasts: History, Psychiatry, and Trauma in the Modern Age, 1870–1930*, edited by Mark S. Micale and Paul Lerner, 92–112. Cambridge: Cambridge University Press.

ENNS, CHARIS, AND BROCK BERSAGLIO. 2020. "On the Coloniality of 'New' Mega-Infrastructure Projects in East Africa." *Antipode* 52 (1): 101–23.

EPSTEIN, CHARLOTTE. 2013. "Constructivism or the Eternal Return of Universals in International Relations: Why Returning to Language Is Vital to Prolonging the Owl's Flight." *European Journal of International Relations* 19 (3): 499–519.

FRIEDEN, JEFFREY A. 1994. "International Investment and Colonial Control: A New Interpretation." *International Organization* 48 (4): 559–93.

GEBRESENBET, FANA, AND DAWIT YOHANNES WONDEMAGEGNEHU. 2021. "New Dimensions in the Grand Ethiopian Renaissance Dam Negotiations: Ontological Security in Egypt and Ethiopia." *African Security* 14 (1): 80–106.

GIDDENS, ANTHONY. 1985. *The Nation-State and Violence.* Cambridge: Polity.

———. 1990. *The Consequences of Modernity.* Cambridge: Polity.

GILLESPIE, TOM, AND SETH SCHINDLER. 2022. "Africa's New Urban Spaces: Deindustrialisation, Infrastructure-Led Development and Real Estate Frontiers." *Review of African Political Economy* 49 (174): 531–49.

GOETTLICH, KERRY. 2018. "The Rise of Linear Borders in World Politics." *European Journal of International Relations* 25 (1): 203–28.

GOODFELLOW, TOM. 2020. "Finance, Infrastructure and Urban Capital: The Political Economy of African 'Gap-Filling'." *Review of African Political Economy* 47 (164): 256–74.

GRANDI, MATTIA. 2021. "Images of the Nile: How Competing Narratives Frame Water Disputes." In *Split Waters*, edited by Luisa Cortesi and K.J. Joy, 176–93. London: Routledge India.

GULDI, JO. 2012. *Roads to Power: Britain Invents the Infrastructure State.* Cambridge, MA: Harvard University Press.

HAMEIRI, SHAHAR, AND LEE JONES. 2015. "Rising Powers and State Transformation: The Case of China." *European Journal of International Relations* 22 (1): 72–98.

HANNAM, KEVIN, MIMI SHELLER, AND JOHN URRY. 2006. "Editorial: Mobilities, Immobilities and Moorings." *Mobilities* 1 (1): 1–22.

HARRINGTON, RALPH. 2001. "The Railway Accident: Trains, Trauma, and Technological Crises in Nineteenth-Century Britain." In *Traumatic Pasts: History, Psychiatry, and Trauma in the Modern Age, 1870–1930*, edited by Mark S. Micale and Paul Lerner, 31–56. Cambridge: Cambridge University Press.

HARVEY, DAVID. 2001. "Globalization and the 'Spatial Fix'." *Geographische Revue* 2: 23–30.

HARVEY, PENELOPE, AND HANNAH KNOX. 2012. "The Enchantments of Infrastructure." *Mobilities* 7: 521–36.

HARVEY, PENELOPE. 2021. "Contingent Statecraft. Infrastructures, Political Creativity, and Experimentation." In *Shifting States: New Perspectives on Security, Infrastructure and Political affect*, edited by Alison Dundon and Richard Vokes, 27–42. London; New York, NY: Bloomsbury Press.

HEADRICK, DANIEL R. 1981. *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century.* Oxford: Oxford University Press.

HECHT, GABRIELLE, ed. 2011. *Entangled Geographies: Empire and Technopolitics in the Global Cold War.* Cambridge, MA: MIT Press.

HILLMAN, JENNIFER, AND DAVID SACKS. 2021. *China's Belt and Road: Implications for the United States.* New York: Council on Foreign Relations.

HO, SELINA. 2020. "Infrastructure and Chinese Power." *International Affairs* 96 (6): 1461–85.

HOBSBAWM, ERIC. 1989. *The Age of Empire, 1875–1914*, New York: Vintage Books.

HOLLOWAY, JOHN. 1994. "Global Capital and the National State." *Capital & Class* 18 (1): 23–49.

HÖNKE, JANA, AND IVAN CUESTA-FERNANDEZ. 2017. "A Topolographical Approach to Infrastructure: Political Topography, Topology and the Port of Dar es Salaam." *Environment and Planning D: Society and Space* 35 (6): 1076–95.

JASANOFF, SHEILA. 2015. "Future Imperfect: Science, Technology, and the Imaginations of Modernity." In *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, edited by Sheila Jasanoff and Sang-Hyun Kim, 1–33. Chicago, IL: University of Chicago Press.

JENSS, ALKE, AND BENJAMIN SCHUETZE. 2021. "Rethinking Authoritarian Power: The Logistics Space and Authoritarian Practices in and between Secondary Port Cities of the Global South." *International Studies Quarterly* 65 (1): 82–94.

JOYCE, PATRICK. 2003. *The Rule of Freedom: Liberalism and the Modern City*. London: Verso.

KAISER, WOLFRAM, AND JOHAN SCHOT. 2014. *Writing the Rules for Europe: Experts, Cartels, and International Organizations | Coleurope*. Basingstoke: Palgrave Macmillan.

KARRAR, HASAN H. 2022. "The Geopolitics of Infrastructure and Securitisation in a Postcolony Frontier Space." *Antipode* 54 (5): 1386–406.

KARUKA, MANU. 2019. *Empire's Tracks: Indigenous Nations, Chinese Workers and the Transcontinental Railway*. Oakland, CA: University of California Press.

KAUFMANN, VINCENT. 2002. *Re-Thinking Mobility. Contemporary Sociology*. Aldershot: Ashgate.

KHALILI, LALEH. 2018. "The Infrastructural Power of the Military: The Geoeconomic Role of the US Army Corps of Engineers in the Arabian Peninsula." *European Journal of International Relations* 24 (4): 911–33.

———. 2020. *Sinews of War and Trade. Shipping and Capitalism in the Arabian Peninsula*. New York, NY: Verso.

KIMARI, WANGUI, AND HENRIK ERNSTSON. 2020. "Imperial Remains and Imperial Invitations: Centering Race within the Contemporary Large-Scale Infrastructures of East Africa." *Antipode* 52 (3): 825–46.

KLIMBURG-WITJES, NINA, NIKOLAUS POECHHACKER, AND GEOFFREY C. BOWKER, eds. 2021. *Sensing In/Security: Sensors as Transnational Security Infrastructures*. Manchester: Mattering Press.

KLIMBURG-WITJES, NINA, AND PAUL TRAUTTMANSDORF, eds. 2023. *Technopolitics and the Making of Europe: Infrastructures of Security*. London: Routledge.

KOOY, MICHELLE, AND KAREN BAKKER. 2008. "Technologies of Government: Constituting Subjectivities, Spaces, and Infrastructures in Colonial and Contemporary Jakarta." *International Journal of Urban and Regional Research* 32 (2): 375–91.

KOSELLECK, REINHART. 2004. *Futures Past: On the Semantics of Historical Time*, New ed. New York, NY: Columbia University Press.

KRASNER, STEPHEN D. 2005. "Building Democracy After Conflict: The Case for Shared Sovereignty." *Journal of Democracy* 16 (1): 69–83.

KURTIÇ, EKIN, AND JOANNE RANDA NUCHO. 2022. "Infrastructural Politics in the Middle East and North Africa: Pasts, Presents, Futures." *Environment and Planning D: Society and Space* 40 (6): 967–74.

KUTELEVA, ANNA, AND DMITRII VASILIEV. 2021. "China's Belt and Road Initiative in Russian Media: Politics of Narratives, Images, and Metaphors." *Eurasian Geography and Economics* 62 (5–6): 582–606.

LARKIN, BRIAN. 2013. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42 (1): 327–43.

LATOUR, BRUNO. 1996. *Aramis, or The Love of Technology*. Cambridge, MA: Harvard University Press.

———. 2005. *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press.

LAW, JOHN. 2001. *Ordering and Obduracy*. Lancaster: Lancaster University, Centre for Science Studies. Accessed May 12, 2024. https://www.lancaster.ac.uk/fass/resources/sociology-online-papers/papers/law-ordering-and-obduracy.pdf.

———. 2002. *Aircraft Stories: Decentering the Object in Technoscience*. Durham, NC: Duke University Press.

LAWSON, GEORGE. 2016. "The Rise of Modern International Order." In *The Globalization of World Politics: An Introduction to International Relations*, edited by John Baylis, Steve Smithson and Patricia Owens, 37–51. Oxford: Oxford University Press.

LEBUHN, HENRIK. 2013. "Local Border Practices and Urban Citizenship in Europe." *City* 17 (1): 37–51.

LEFEBVRE, HENRI. 2002. "Space and the State." In *State Space: A Reader*, edited by Neil Brenner, Bob Jessop, Martin Jones and Gordon MacLeod, 84–100. Oxford: Blackwell.

LEGRO, JEFFREY. 2005. *Rethinking the World: Great Power Strategies and International Order*. Ithaca, NY: Cornell University Press.

LEVINSON, MARC. 2016. *The Box. How the Shipping Container Made the World Smaller and the World Economy Bigger*, 2nd ed. Princeton, NJ: Princeton University Press.

LI, MINGJIANG. 2020. "The Belt and Road Initiative: Geo-Economics and Indo-Pacific Security Competition." *International Affairs* 96 (1): 169–87.

LINEBARGER, CHRISTOPHER, AND ALEX BRAITHWAITE. 2020. "Do Walls Work? The Effectiveness of Border Barriers in Containing the Cross-Border Spread of Violent Militancy." *International Studies Quarterly* 64 (3): 487–98.

LINTON, JAMIE, AND JESSICA BUDDS. 2014. "The Hydrosocial Cycle: Defining and Mobilizing a Relational-Dialectical Approach to Water." *Geoforum* 57: 170–80.

LOCHERY, EMMA. 2015. "Electricity Provision and State Formation in Somaliland." *PhD*. University of Oxford.

LUNDBORG, TOM, AND NICK VAUGHAN-WILLIAMS. 2015. "New Materialisms, Discourse Analysis, and International Relations: A Radical Intertextual Approach." *Review of International Studies* 41 (1): 3–25.

MAINWARING, CETTA, AND MARIA LORENA COOK. 2018. "Immigration Detention: An Anglo Model." *Migration Studies* 7 (4): 455–76.

MANN, MICHAEL. 1984. "The Autonomous Power of the State: Its Origins, Mechanisms and Results." *European Journal of Sociology* 25 (2): 185–213.

———. 1986. *The Sources of Social Power*. Cambridge: Cambridge University Press.

MAXIMILIAN, MAYER, AND MICHELE ACUTO. 2015. "The Global Governance of Large Technical Systems." *Millennium: Journal of International Studies* 43 (2): 660–83.

MCCARTHY, DANIEL R. 2018. "Introduction. Technology in World Politics." In *Technology and World Politics: An Introduction*, edited by Daniel R. McCarthy, 1–21. London; New York, NY: Routledge.

MERRIMAN, PETER, AND RHYS JONES. 2017. "Nations, Materialities and Affects." *Progress in Human Geography* 41 (5): 600–17.

MEZZADRA, SANDRO, AND BRETT NEILSON. 2013. *Border as Method, or the Multiplication of Labour*. Durham, NC; London: Duke University Press.

MISA, THOMAS J., AND JOHAN SCHOT. 2005. "Inventing Europe: Technology and the Hidden Integration of Europe." *History and Technology* 21 (1): 1–19.

MITCHELL, TIMOTHY. 1991a. *Colonising Egypt*. Berkeley, CA: University of California Press.

———. 1991b. "The Limits of the State: Beyond Statist Approaches and Their Critics." *American Political Science Review* 85 (1): 78–96.

———. 2002. *Rule of Experts: Egypt, Techno-Politics, Modernity*. Berkeley, CA: University of California Press.

MOEHLECKE, CAROLINA, CALVIN THRALL, AND RACHEL L. WELLHAUSEN. 2023. "Global Value Chains as a Constraint on Sovereignty: Evidence from Investor–State Dispute Settlement." *International Studies Quarterly* 67 (1): sqad007. https://doi.org/10.1093/isq/sqad007.

MOLD, ANDREW. 2012. "Will It All End in Tears? Infrastructure Spending and African Development in Historical Perspective." *Journal of International Development* 24 (2): 237–54.

MORT, MAGGIE. 2001. *Building the Trident Network: A Study of the Enrollment of People, Knowledge, and Machines*. Cambridge, MA: MIT Press.

MOUNTZ, ALISON, KATE CODDINGTON, R. TINA CATANIA, AND JENNA M. LOYD. 2012. "Conceptualizing Detention: Mobility, Containment, Bordering, and Exclusion." *Progress in Human Geography* 37 (4): 522–41.

NASR, HALA, AND ANDREAS NEEF. 2016. "Ethiopia's Challenge to Egyptian Hegemony in the Nile River Basin: The Case of the Grand Ethiopian Renaissance Dam." *Geopolitics* 21 (4): 969–89.

NEXON, DANIEL H., AND IVER B. NEUMANN. 2018. "Hegemonic-Order Theory: A Field-Theoretic Account." *European Journal of International Relations* 24 (3): 662–86.

NOAA, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION. 2024. "R.M.S Titanic—History and Significance." Accessed February 6, 2024. https://www.noaa.gov/gc-international-section/rms-titanic-history-and-significance.

NOORLOOS, FEMKE VAN, AND MARJAN KLOOSTERBOER. 2018. "Africa's New Cities: The Contested Future of Urbanisation." *Urban Studies* 55 (6): 1223–41.

NOORT, CAROLIJN VAN, AND THOMAS COLLEY. 2021. "How Do Strategic Narratives Shape Policy Adoption? Responses to China's Belt and Road Initiative." *Review of International Studies* 47 (1): 39–63.

NORDIN, ASTRID H.M., AND MIKAEL WEISSMANN. 2018. "Will Trump make China Great again? The Belt and Road Initiative and International Order." *International Affairs* 94 (2): 231–49.

NUGENT, PAUL. 2018. "Africa's Re-Enchantment with Big Infrastructure: White Elephants Dancing in Virtuous Circles?" In *Extractive Industries and Changing State Dynamics in Africa: Beyond the Resource Curse*, edited by Jon Schubert, Ulf Engel and Elísio Macamo, 22–40. London: Routledge.

OKE, NICOLE. 2009. "Globalizing Time and Space: Temporal and Spatial Considerations in Discourses of Globalization." *International Political Sociology* 3 (3): 310–26.

ONG, AIHWA. 2000. "Graduated Sovereignty in South-East Asia." *Theory, Culture & Society* 17 (4): 55–75.

———. 2004. "The Chinese Axis: Zoning Technologies and Variegated Sovereignty." *Journal of East Asian Studies* 4 (1): 69–96.

OWEN, JOHN M. 2019. "Ikenberry, International Relations Theory, and the Rise of China." *The British Journal of Politics and International Relations* 21 (1): 55–62.

———. 2021. "Two Emerging International Orders? China and the United States." *International Affairs* 97 (5): 1415–31.

OZGUC, UMUT. 2021. "Rethinking Border Walls as Fluid Meshworks." *Security Dialogue* 52 (4): 287–305.

PRESTHOLDT, JEREMY. 2015. "Locating the Indian Ocean: Notes on the Postcolonial Reconstitution of Space." *Journal of Eastern African Studies* 9 (3): 440–67.

PRITCHARD, SARA B. 2011. *Confluence: The Nature of Technology and the Remaking of the Rhone.* Cambridge, MA: Harvard University Press.

ROSENBERG, JUSTIN. 1994. *The Empire of Civil Society. A Critique of the Realist Theory of International Relations.* London; New York, NY: Verso.

———. 2013. "Kenneth Waltz and Leon Trotsky: Anarchy in the Mirror of Uneven and Combined Development." *International Politics* 50 (2): 183–230.

———. 2016. "International Relations in the Prison of Political Science." *International Relations* 30 (2): 127–53.

ROWLAND, NICHOLAS J., AND JAN-HENDRIK PASSOTH. 2015. "Infrastructure and the State in Science and Technology Studies." *Social Studies of Science* 45 (1): 137–45.

RUGGIE, JOHAN GERARD. 1998. *Constructing the World Polity: Essays on International Institutionalization.* London: Routledge.

SALTER, MARK B. 2013. "To Make Move and Let Stop: Mobility and the Assemblage of Circulation." *Mobilities* 8 (1): 7–19.

———. 2015. *Making Things International 1: Circuits and Motion*, edited by Mark B. Salter. Minneapolis, MN; London: University of Minnesota Press.

SASSEN, SASKIA. 1991. *The Global City: New York, London, Tokyo.* Princeton, NJ: Princeton University Press.

———. 1996. "Spatialities and Temporalities of the Global: Elements for a Theoretisation." In *Modernity at Large: Cultural Dimensions of Globalization*, edited by Arjun Appadurai, 260–78. Minneapolis, MN: University of Minnesota Press.

SCHINDLER, SETH, SIMIN FADAEE, AND DAN BROCKINGTON. 2019. "Contemporary Megaprojects: An Introduction." *Environment and Society* 10 (1): 1–8.

SCHIPPER, FRANK, AND JOHAN SCHOT. 2011. "Infrastructural Europeanism, or the Project of Building Europe on Infrastructures: An Introduction." *History and Technology* 27 (3): 245–64.

SCHLICHTE, KLAUS. 2017. "The International State: Comparing Statehood in Central Asia and Sub-Saharan Africa." In *Paradox of Power. The Logic of State Weakness in Eurasia*, edited by John Heathershaw and Edward Schatz, 105–19. Pittsburgh, PA: University of Pittsburgh Press.

SCHOUTEN, PEER, AND MAXIMILIAN MAYER. 2017. "Materiality." In *Routledge Handbook of International Political Sociology*, edited by Xavier Guillaume and Pinar Bilgin, 309–18. London; New York, NY: Routledge.

SCHOUTEN, PEER. 2014. "Security as Controversy: Reassembling Security at Amsterdam Airport." *Security Dialogue* 45 (1): 23–42.

SCOTT, JAMES C. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed.* New Haven, CA: Yale University Press.

SENNETT, RICHARD. 2006. "The Open City." Accessed July 18, 2021. https://urbanage.lsecities.net/essays/the-open-cityhttp.

SHELLER, MIMI, AND JOHN URRY. 2006. "The New Mobilities Paradigm." *Environment and Planning A: Economy and Space* 38 (2): 207–26.

SMIRL, LISA. 2008. "Building the Other, Constructing Ourselves: Spatial Dimensions of International Humanitarian Response." *International Political Sociology* 2 (3): 236–53.

———. 2015. *Spaces of Aid: How Cars, Compounds, and Hotels Shape Humanitarianism.* London: Zed Books.

SMITH, NICHOLAS W.S. 2021. *Colonial Chaos in the Southern Red Sea: A History of Violence from 1830 to the Twentieth Century.* New York, NY: Cambridge University Press.

SQUIRE, VICKI. 2015. "Reshaping Critical Geopolitics? The Materialist Challenge." *Review of International Studies* 41 (1): 139–59.

SRNICEK, NICK, MARIA FOTOU, AND EDMUND ARGHAND. 2013. "Introduction: Materialism and World Politics." *Millennium: Journal of International Studies* 41 (3): 397.

STALDER, LAURENT, AND CARLOTTA DARO. 2017. "Eight Points on Infrastructure and Architecture." In *Infrastructure Space*, edited by Ilka Ruby and Andreas Ruby, 26–29. Detroit, MI: Ruby Press.

STAR, SUSAN LEIGH. 1999. "The Ethnography of Infrastructure." *American Behavioral Scientist* 43 (3): 377–91.

STEINBERG, PHILIP E. 2009. "Sovereignty, Territory, and the Mapping of Mobility: A View from the Outside." *Annals of the Association of American Geographers* 99 (3): 467–95.

STRANG, VERONICA. 2016. "Infrastructural Relations: Water, Political Power, and the Rise of a New 'Despotic Regime'." *Water Alternatives* 9 (2): 292–318.

———. 2021. "Materialising the State: The Meaning of Water Infrastructure." In *Shifting States: New Per-

spectives on Security, Infrastructure and Political Affect, edited by Alison Dundon and Richard Vokes, 43–61. London; New York, NY: Bloomsbury Press.

Strange, Susan. 1995. "The Defective State." *Daedalus* 124 (2): 55–74.

Swyngedouw, Erik. 1996. "The City as a Hybrid: On Nature, Society, and Cyborg Urbanisation." *Capitalism Nature Socialism* 7 (25): 65–80.

Tan, Weizen. 2021. "China's Zero-COVID Policy Is so Strict that It Shut Down a Whole Shipping Terminal after Just One Case." *CNBC.* August 12, 2021. Accessed May 12, 2024. https://www.cnbc.com/2021/08/13/chinas-zero-covid-strategy-to-disrupt-shipping-as-ningbo-zhoushan-port-shuts-.html.

Thrift, Nigel. 2006. "Space." *Theory, Culture & Society* 23 (2–3): 139–46.

Tickner, Arlene B., and Amaya Querejazu. 2021. "Weaving Worlds: Cosmopraxis as Relational Sensibility." *International Studies Review* 23 (2): 391–408.

Tsing, Anna. 2005. *Friction: An Ethnography of Global Connection.* Princeton, NJ: Princeton University Press.

———. 2009. "Supply Chains and the Human Condition." *Rethinking Marxism,* 21 (2):148–176.

Tsjeng, Zing. 2020. "How Britain Stole $45 Trillion from India with Trains." *VICE.* August 20, 2020. Accessed July 28, 2023. https://www.vice.com/en/article/y3z4wk/watch-how-britain-stole-dollar45-trillion-from-india-with-trains.

Wacquant, Loïc, Tom Slater, and Virgílio Borges Pereira. 2014. "Territorial Stigmatization in Action." *Environment and Planning A: Economy and Space* 46 (6): 1270–80.

Walters, William. 2002. "The Power of Inscription: Beyond Social Construction and Deconstruction in European Integration Studies." *Millennium: Journal of International Studies* 31 (1): 83–108.

———. 2014. "Drone Strikes, Dingpolitik and Beyond: Furthering the Debate on Materiality and Security." *Security Dialogue* 45 (2): 101–18.

Wan, Yan, Lujia Zhang, Charlie Qiuli Xue, and Yingbo Xiao. 2020. "Djibouti: From a Colonial Fabrication to the Deviation of the 'Shekou Model'." *Cities* 97 (102488): 1–14.

Wang, Fei-Ling, and Esi A. Elliot. 2014. "China in Africa: Presence, Perceptions and Prospects." *Journal of Contemporary China* 23 (90): 1012–32.

Watts, Michael J. 2019. "Reflections on Circulation, Logistics, and the Frontiers of Capitalist Supply Chains." *Environment and Planning D: Society and Space* 37 (5): 942–9.

Weber, Max. 1948. "Religious Rejections of the World and Their Directions." In *From Max Weber: Essays in Sociology,* edited by H.H. Gerth and C. Wright Mills, 267–301. London: Routledge.

Weinthal, Erika, and Jeannie Sowers. 2019. "Targeting Infrastructure and Livelihoods in the West Bank and Gaza." *International Affairs* 95 (2): 319–40.

Weizman, Eyal. 2007. *Hollow Land: Israel's Architecture of Occupation.* New York, NY: Verso.

Wendt, Alexander. 1999. *Social Theory of International Politics.* Cambridge: Cambridge University Press.

William, E. Connolly. 2011. *A World of Becoming.* Durham, NC: Duke University Press.

Zarakol, Ayşe. 2017. "Theorising Hierarchies: An Introduction." In *Hierarchies in World Politics,* edited by Ayşe Zarakol, 1–14. Cambridge: Cambridge University Press.

Zhao, Minghao. 2023. "Infrastructure Statecraft and Sino-U.S. Strategic Competition in the Indo-Pacific." *China Review* 23 (1): 45–77.

Ziadah, Rafeef. 2023. "Logistic Landscapes. Corporate Power and Capital in the Maritime Industry." *Socialist Register* 59: 47–63.