

## INTRODUCTION

### Special Issue: Legal Infrastructures

# Editors' Introduction to Special Issue on Legal Infrastructures

William Hamilton Byrne<sup>id</sup>, Thomas Gammeltoft-Hansen and Nora Stappert<sup>id</sup>

MOBILE Center of Excellence for Global Mobility Law, University of Copenhagen, Copenhagen, Denmark

**Corresponding author:** William Hamilton Byrne; Email: [william.hamilton.byrne@jur.ku.dk](mailto:william.hamilton.byrne@jur.ku.dk)

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In the last few decades, international legal theory has been characterized by heated debates on how different regimes of international and regional law functionally interrelate, the nature of international law as it is applied, and how international law relates to society. These debates are foundational because they concern the essence of how we think about international law, how it is enacted and practiced, and the extent to which it fulfils its stated aims.<sup>1</sup> As international law has proliferated in scale and scope, its regulatory ambition has both expanded and deepened. At the same time, its different parts have also come into greater friction, prompting concerns about “fragmentation”<sup>2</sup> or the rise of “international regime complexity”<sup>3</sup> as fundamental yet potentially disconcerting traits of international law today.

Within doctrinal legal scholarship, much energy has been devoted to how such normative frictions and overlaps should be functionally solved, ordered, or (re-)systematized.<sup>4</sup> Scholars of a more socio-legal orientation have critically explored how such dynamics can lead to politicization, as states on the one hand seek to optimize sovereign maneuverability through strategies such as forum shopping,<sup>5</sup> and on the other hand rights activists forge new normative linkages for strategic

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<sup>1</sup>For the arguable beginning of this debate in earnest, see DAVID KENNEDY, *INTERNATIONAL LEGAL STRUCTURES* (Nomos, 1987); MARTTI KOSKENNIEMI, *FROM APOLOGY TO UTOPIA: THE STRUCTURE OF INTERNATIONAL LEGAL ARGUMENT* (Cambridge University Press, 1989).

<sup>2</sup>Martti Koskeniemi & Päivi Leino-Sandberg, *Fragmentation of International Law? Postmodern Anxieties*, 15 *Leiden J. Int'l L.* 553, (2002); Eyal Benvenisti & George W. Downs, *The Empire's New Clothes: Political Economy and the Fragmentation of International Law*, 60 *STAN. L. REV.* 595, (2007).

<sup>3</sup>Karen J. Alter & Sophie Meunier, *The Politics of International Regime Complexity*, 7(1) *Perspectives on Pols.* 13, (2009).

<sup>4</sup>See e.g. Christian Tomuschat, *International Law as a Coherent System: Unity or Fragmentation?*, in *LOOKING TO THE FUTURE: LOOKING TO THE FUTURE: ESSAYS ON INTERNATIONAL LAW IN HONOR OF W. MICHAEL REISMAN* 323, (Brill Nijhoff, 2011); Andreas Fischer-Lescano & Gunther Teubner, *Regime-Collisions: The Vain Search for Legal Unity in the Fragmentation of Global Law*, 25 *MICH. J. INT'L L.* 999, (2003); MARIO PROST, *THE CONCEPT OF UNITY IN PUBLIC INTERNATIONAL LAW* (2012); Margaret Young, *Introduction: The Productive Friction between Regimes*, in *REGIME INTERACTION IN INTERNATIONAL LAW: FACING FRAGMENTATION* (2012).

<sup>5</sup>Itamar Mann, *Dialectic of Transnationalism: Unauthorized Migration and Human Rights, 1993-2013*, 54 *HARV. INT'L L.J.* 315, (2013). See *THE CHANGING PRACTICES OF INTERNATIONAL LAW* (Tanja Aalberts & Thomas Gammeltoft-Hansen eds., 2018) (showing a more general exploration of this phenomenon).

litigation.<sup>6</sup> Comparatively less attention, however, has been given to the more systematic affordances these types of normative interlinkages might ultimately bring about—in other words, their productive possibilities. Recent work on, for example, “inter-legality”<sup>7</sup> or “entanglement”<sup>8</sup> in international law suggests one possible direction for such a perspective, emphasizing, for instance, how repeated interactions across legal regimes may produce novel and oftentimes unforeseen normative effects.<sup>9</sup> To advance this scholarship, this special issue leverages another, related heuristic for thinking about how law interacts across normative scales and the relationship between international law and the socio-material world in a cohesive manner: *Infrastructure*.

Recent years have seen emerging interest in the concept of infrastructure in legal scholarship, including extensive analyses of the legal aspects of public infrastructure and socio-technical systems.<sup>10</sup> Of course, as a term, infrastructure is hardly new to legal discourse, given that it has an ordinary semantic meaning that denotes material constructions, facilities, and systems that support or enable some enterprise or basic societal function, reflecting the Latin derivation from *infra*—meaning “below”—and the French word *structure*.<sup>11</sup> In legal scholarship, the term *legal infrastructure* is thus sometimes used to simply describe a collection of laws that supports social institutions—for instance, as “the socially available set of legal materials that economic actors can use to help govern relationships.”<sup>12</sup> Yet, the term and idea of infrastructure as it now often appears across the social sciences and humanities is analytically much broader than this, and has come to describe a field of research in its own right, namely infrastructural studies.

Infrastructural studies is a broad church, a transdisciplinary field that is united by a general focus on the cultural aspects of social technologies, exhibiting research from fields as diverse as anthropology, science and technology studies (STS), history, geography, architecture, literary theory, and critical theory.<sup>13</sup> While there is no universal definition of what an infrastructure is within this broad research field, it is nevertheless possible to discern some core elements of infrastructures as both a physical thing and a way of thinking about things. A core theme has been to focus on the infrastructural qualities of things that operate below society as “system[s] of substrates.”<sup>14</sup> Thomas Hughes first brought our attention to the role of electricity infrastructures in large-scale social transformation, enabled through a mix of human creativity, expert management, and the engineering of nature.<sup>15</sup> Subsequent studies of the historical construction of technologies including air traffic control drew attention to infrastructures as socio-technical

<sup>6</sup>MORITZ BAUMGÄRTEL, DEMANDING RIGHTS: EUROPE’S SUPRANATIONAL COURTS AND THE DILEMMA OF MIGRANT VULNERABILITY (2019); Barbara Stark, *International Law from the Bottom Up: Fragmentation and Transformation*, 34 U. PA. J. INT’L L. 687, (2012); Nikolas Feith Tan & Thomas Gammeltoft-Hansen, *A Topographical Approach to Accountability for Human Rights Violations in Migration Control*, 21 GERMAN L.J. 335, (2020).

<sup>7</sup>JAN KLABBERS AND GIANLUIGI PALOMBELLA, *THE CHALLENGE OF INTER-LEGALITY* (2019).

<sup>8</sup>ENTANGLED LEGALITIES BEYOND THE STATE (Nico Krisch ed., 2020).

<sup>9</sup>Thomas Gammeltoft-Hansen & Mikael Rask Madsen, *Regime Entanglement in the Emergence of Interstitial Legal Fields: Denmark and the Uneasy Marriage of Human Rights and Migration Law*, 40 NORDIQUES 1, (2021).

<sup>10</sup>See e.g. Benedict Kingsbury & Nahuel Maisley, *Infrastructures and Laws: Publics and Publicness*, 17 ANN. REV. L. AND SOC. SCI. 353, (2021); Gavin Sullivan, *Law, Technology, and Data-Driven Security: Infra-Legalities as Method Assemblage*, 49 J.L. AND SOC. 31 (2022).

<sup>11</sup>Ashley Carse, *Keyword: Infrastructure. How a Humble French Engineering Term Shaped The Modern World*, in *INFRASTRUCTURES AND SOCIAL COMPLEXITY: A COMPANION* 27 (Penny Harvey et al., eds., 2016).

<sup>12</sup>See e.g. Gillian K. Hadfield, *Law for a Flat World: Legal Infrastructure and the New Economy*, UC BERKELEY: BERKELEY PROGRAM IN LAW AND ECONOMICS 1, 1 (2010).

<sup>13</sup>See *CIStudies Bibliography*, CRITICAL INFRASTRUCTURE STUDIES, <https://cistudies.org/critical-infrastructures-bibliography/> (last visited Sept. 18, 2024) (providing an introduction to the incredible breadth of the scholarship).

<sup>14</sup>Susan Leigh Star, *The Ethnography of Infrastructure*, AM. BEHAVIORAL SCIENTIST, 377, 380 (1999).

<sup>15</sup>THOMAS HUGHES, *NETWORKS OF POWER: ELECTRIFICATION IN WESTERN SOCIETY, 1880–1930*, (1983).

systems that work through norms, practices, and materials.<sup>16</sup> However, infrastructural studies really took off following Geoffrey C. Bowker and Susan Leigh Star's influential work that conceives of infrastructures as interactional dependencies of social relations and agencies, opening up the window for expansive studies on more intangible infrastructures such as knowledge eco-systems.<sup>17</sup>

It is not difficult to see how law can be encapsulated by such notions. Legal frameworks in many ways underlie not only physical but also more immaterial kinds of infrastructure, even if this is not always broadly appreciated. For instance, Mariana Valverde has foundationally shown how a wide array of legal tools—from zoning laws and materials regulations to contracts and financing deals—underpin every aspect of large-scale construction projects.<sup>18</sup> Geoff Gordon has elucidated on an international level how the standardization of Coordinated Universal Time (UTC) in 1884 enabled not only the coordination and interoperation of global travel and shipping routes, but also modern internet communication and global finance, where high frequency trading depends on microsecond time stamps.<sup>19</sup>

Law in these contexts is often conceptualized as part of wider socio-material infrastructures<sup>20</sup> or as a relevant background variable for their governance, expansion and day-to-day operation.<sup>21</sup> Yet, it is also possible to think about law as a form of infrastructure in and of itself. Scholars within infrastructure studies sometimes draw parallels to law, suggesting that “infrastructures act like laws” in terms of “creat[ing] both opportunities and limits” for how knowledge practices take shape across time and space.<sup>22</sup> Thinking infrastructurally about law from such a perspective might lead scholars to examine the interoperation—or lack thereof—between different legal frameworks, how particular interpretations or normative constructs can “flow” across jurisdictional and regime boundaries, and the ways in which existing legal structures predispose new legal initiatives. Specifically regarding the ability to incorporate new legal initiatives, Léna Pellandini-Simányi and Zsuzsanna Vargha show in their study of financial law how lawmaking processes end up as “legal bricolage”, as legal amendments, like puzzle pieces, always have to fit the existing system of laws at multiple contact points.<sup>23</sup> In other cases, legal regimes develop specifically to provide a kind of “normative scaffolding” for widely different regulatory areas—such as in the case of the EU Schengen *acquis*, which has come to encompass an expanding array of issues both in relation to

<sup>16</sup>See e.g. RENATE MAYNTZ & THOMAS HUGHES, *THE DEVELOPMENT OF LARGE TECHNICAL SYSTEMS* (1988); STEVE GRAHAM & SIMON MARVIN, *SPLINTERING URBANISM: NETWORKED INFRASTRUCTURES, TECHNOLOGICAL MOBILITIES AND THE URBAN CONDITION* (2001).

<sup>17</sup>GEOFFREY C. BOWKER & SUSAN LEIGH STAR, *SORTING THINGS OUT: CLASSIFICATION AND ITS CONSEQUENCES* (1999); GEOFFREY C. BOWKER, *SCIENCE ON THE RUN INFORMATION MANAGEMENT AND INDUSTRIAL GEOPHYSICS AT SCHLUMBERGER, 1920-1940*, (1994); Star *supra* note 14; Susan Leigh Star & Karen Ruhleder, *Steps Toward an Ecology of Infrastructure: Design and Access for Large Information Spaces*, 7 INFO. SYS. RSCH. 111, (1996).

<sup>18</sup>MARIANA VALVERDE, *INFRASTRUCTURE: NEW TRAJECTORIES IN LAW* (2022). See also Mariana Valverde, *The “Hairs of Hope”: Toward a Fuller Understanding of the Legal, Material, and Social Infrastructure of Infrastructure*, 25 GERMAN L.J. (2024) (appearing in this Special Issue).

<sup>19</sup>Geoff Gordon, *Engaging an Infrastructure of Time Production with International Law*, 9 LONDON REV. INT'L L. 319, (2021).

<sup>20</sup>*Id.* at 319.

<sup>21</sup>Nahuel Maisely, *The Infrastructure of International Law-Making: How Buildings Shape the Publicness of the Global Law-Making System*, 117 AJIL UNBOUND 21, (2023); Deborah Cowen, *Law as Infrastructure of Colonial Space: Sketches from Turtle Island*, 117 AJIL UNBOUND 2, (2023).

<sup>22</sup>Paul Edwards, *Infrastructure and Modernity: Force, Time, and Social Organization in the History of Socio-technical Systems*, in MODERNITY AND TECHNOLOGY 185, 191 (Thomas J. Misa et al. eds., 2002). See also Hannah Appel, Nikhil Anand and Akhil Gupta, *Introduction: Temporality, Politics, and the Promise of Infrastructure*, in THE PROMISE OF INFRASTRUCTURE 1, (2018).

<sup>23</sup>Léna Pellandini-Simányi & Zsuzsanna Vargha, *Legal Infrastructures: How Laws Matter in the Organization of New Markets*, 42 ORG. STUD. 867, 873-79 (2021).

EU law and relations with third countries.<sup>24</sup> The contributions to this special issue explore both these perspectives to varying degrees. The analytical distinction between “law of infrastructure” and “law *as* infrastructure” is one we further develop in our conceptual framework article opening this issue.<sup>25</sup>

Another cross-cutting perspective running through the various contributions to this special issue is the way in which law and legal infrastructure relates to society, individual rights, exercises of power, and the distribution of social goods. In recent years, scholars within legal anthropology,<sup>26</sup> TWAIL,<sup>27</sup> and global administrative law<sup>28</sup> have drawn from infrastructural studies to critically examine the role of law in sustaining or accentuating, for example, structural injustices, discrimination, and rights violations. In his analysis of the “global mobility infrastructure,” Thomas Spijkerboer convincingly shows how the interaction of visa rules, aviation and security law, and national immigration codes produce highly discriminatory geopolitical zones for access to international travel.<sup>29</sup> Spijkerboer’s contribution thus underlines the promise of follow-up studies using an infrastructural lens in this context, as such a lens further foregrounds the role of law to afford or restrict access to things, ideas, entities, and resources by creating flow or stoppage.<sup>30</sup> On a broader level, a recent symposium in *AJIL Unbound* specifically explored how socio-material infrastructures, from colonialism to current-day state-building projects, continue to shape international law.<sup>31</sup> This emphasizes another key insight from infrastructure studies, namely how infrastructures constitute power, and the ordering that emerges from them.<sup>32</sup>

Vice versa, within the otherwise sprawling field of infrastructural studies, attention to legal structures and interactions, including across normative scales and specializations, is often left underexplored. At best, law is often considered as a background or passive variable. As the contributions to the above-mentioned *AJIL Unbound* symposium highlight, however, there is no denying that law, including international law, is often a dependent variable for other types of infrastructural projects, and the political, economic, and social relations underpinning them.<sup>33</sup> Moreover, as the contributions to this special issue highlight, denying law’s power to shape the world risks underestimating the normative force of law and thereby misconstruing its role in society.<sup>34</sup> Beyond an import of certain concepts and analytical modes of thinking for the benefit of legal theory, this special issue thus ultimately also aims to speak back and bring a more distinct focus on law and legal regulations to bear in infrastructure studies. To achieve this, the special issue develops a concept of *legal infrastructures* that can serve as both a theoretical and empirically

<sup>24</sup>William Hamilton Byrne & Thomas Gammeltoft-Hansen, *Untangling the Legal Infrastructure of Schengen*, 9 EUR. PAPERS 157, 166 (2024).

<sup>25</sup>William Hamilton Byrne, Thomas Gammeltoft-Hansen & Nora Stappert, *Legal infrastructures: Towards a Conceptual Framework*, 25 GERMAN L.J. 1229, 1237–38 (2024) (appearing in this same Special Issue).

<sup>26</sup>See e.g. Annelise Riles, *A New Agenda for the Cultural Study of Law: Taking on the Technicalities*, 53 BUFF. L. REV. 973, (2015).

<sup>27</sup>See e.g. LUIS ESLAVA, *LOCAL SPACE, GLOBAL LIFE: THE EVERYDAY OPERATION OF INTERNATIONAL LAW AND DEVELOPMENT* (2015).

<sup>28</sup>See generally Benedict Kingsbury, *The Concept of “Law” in Global Administrative Law*, 20 EUR. J. INT’L L. 23 (2009).

<sup>29</sup>Thomas Spijkerboer, *The Global Mobility Infrastructure: Reconceptualising the Externalisation of Migration Control*, 20 EUR. J. MIGRATION AND L. 452, 452 (2018).

<sup>30</sup>Hannah Appel et al., *Introduction: the Infrastructure Toolbox’ Cultural Anthropology*, SOCIETY FOR CULTURAL ANTHROPOLOGY (Sept. 24, 2015), <https://culanth.org/fieldsights/introduction-the-infrastructure-toolbox>.

<sup>31</sup>Benedict Kingsbury, *Introduction to the Symposium on Infrastructuring International Law*, 117 AJIL UNBOUND 1, (2023); Edefe Ojomo, *International Law and Regional Electricity Infrastructure: The West African Power Pool*, 117 AJIL UNBOUND 16, (2023).

<sup>32</sup>Venkatesan et al, *Attention To Infrastructure Offers a Welcome Reconfiguration of Anthropological Approaches to the Political*, 38 CRITIQUE OF ANTHROPOLOGY 3, (2018).

<sup>33</sup>See Kingsbury, *supra* note 31.

<sup>34</sup>See Pellandini-Simányi & Vargha, *supra* note 23 (showing another significant example of “law’s agency” in infrastructures).

generative research agenda, approaching what is taking place at the nexus between law, practices, and materials.

As the opening contribution, our conceptual framework invites a provocation to think of law as a form of infrastructure, developing a concept of legal infrastructures that draws not only from infrastructural studies, but also international legal theory and insights from the new materialist turn in legal scholarship. In our review of the infrastructural studies literature, we distill a conceptualization of infrastructures as entailing *material*, *relational*, and *distributional* elements. We articulate this conception of infrastructures with specific regard to foundational problems of legal thought across three analytical dimensions. We consider legal infrastructures, firstly, as socio-material formations that generate societal effects; secondly, as forms of social organization that recursively entangle to produce new configurations; and finally as inherently distributive and thereby affecting normative developments across traditional regime boundaries.

In her follow-up contribution, Jaya Ramji-Nogales turns to the analytically productive notions of infrastructural failures, dysfunction, and even breakdown, using the legal infrastructures related to the southwestern United States border as a focal point. In doing so, she unpacks a border infrastructure composed of overlapping regional, bilateral, national, and international rulesets, which creates far-reaching dysfunctions due to its partly opaque, discretionary, and incomplete nature. To develop this argument, she responds to our opening contribution by examining the *material*, *relational*, and *distributive* dimensions of this border legal infrastructure, using illustrations ranging from the contested legal basis of installing a floating barrier in the Rio Grande to infrastructural harms caused by the obligatory use of the CBP One smartphone app to make an appointment to apply for asylum. Ramji-Nogales's contribution uses infrastructural dysfunction as a lens to highlight the role of political polarization in accelerating decay and even breakdown within legal infrastructures. As her analysis shows, such legal infrastructural failings include, among others, extra-legal constructions of physical infrastructures as well as an overstretched judicial system seeking to navigate a highly politicized environment, with at times contradictory results.

Pointing to a different kind of global bordering for human mobility, Frédéric Mégret draws attention to an omnipresent, but often overlooked or even taken-for-granted, legal object—namely non-immigration visas. His article highlights both the potential of infrastructural thinking to draw attention to so far under-researched constellations of legal rules and provisions, as well as legal infrastructure as an analytical lens for examining the distributional effects of law. In doing so, Mégret points to the “banality of arbitrariness” inherent in the day-to-day refusal of non-immigration visas,<sup>35</sup> the granting of which remains a necessary precondition for regular international travel for large parts of the world's populations. Deeply steeped in intersecting forms of exclusion, denials of—or even the impossibility of applying for—non-immigration visas bear considerable costs, impeding professional opportunities—including participation in academic conferences—the option of pursuing further education abroad, as well as vital family visits. Understanding infrastructure as consisting of law, administrative practices, their material manifestations, and situated conditions, Mégret's empirically rich and nuanced analysis sheds light on the overlapping obstacles applicants face throughout the process of seeking to gain access to a non-immigration visa, frequently entrenching discriminatory patterns, especially regarding race and class.

Closely related, Christian Brown Prener and Thomas Gammeltoft-Hansen's article examines citizenship as a focal point for their analysis of human mobility law as a multi-layered and densely interconnected legal infrastructure. As their contribution's starting point, they use a legal infrastructural lens to understand human mobility law as a legal field that stretches across a plethora of interacting legal regimes, ranging from refugee and human rights law to aviation and

<sup>35</sup>Frédéric Mégret, *The Travel Visa as the Ubiquitous Legal Infrastructure of Everyday Global Mobility Arbitrariness*, 25 GERMAN L.J. 1265, 1265 (2024) (appearing in this same Special Issue).



labor law. To examine cross-regime interactions and co-constitutions typically overlooked by regime-specific analyses, they argue for instead using legal constructs that act as nodes connecting intersecting legal regimes as an analytical entry point. Brown Prener and Gammeltoft-Hansen demonstrate the analytical purchase of their approach by examining citizenship as such an “axial centrepiece” and “central organizing medium.”<sup>36</sup> Ultimately, their analysis underlines the *distributive* effects of legal infrastructures, as citizenship enables, but importantly also prevents cross-border mobility for a sizeable proportion of the world’s populations, ultimately reproducing global socio-economic inequalities. At the same time, Brown Prener and Gammeltoft-Hansen’s contribution also directs our attention to how citizenship has changed over time due to the increasingly commonplace acceptance of dual citizenship. Such a change has provided opportunities for increased mobility to a small global elite, thereby again entrenching socio-economic inequalities, both globally and domestically.

Gavin Sullivan and Dimitri van den Meerssche turn to the relationship between *law and digital infrastructures*. Drawing on extensive interviews with policy officials and data engineers, their article provides a critical examination of Cerberus, the United Kingdom’s new digital bordering platform that is currently under development. As an “emergent algorithmic bordering infrastructure,”<sup>37</sup> Cerberus combines forms of data that were previously held separately, ultimately with the aim of introducing algorithmic modes of “risk” detection. Their careful analysis demonstrates how this new digital infrastructure mediates and reconfigures EU data protection standards, such as a requirement for “reasonable suspicion.” More fundamentally, Sullivan and van den Meerssche show how legal standards become etched into this emergent digital infrastructure via a legal-technological translation process that in turn shapes how these legal norms are and can be understood. Such legal-technological processes of translation and reconfiguration have far-reaching consequences. Perhaps most importantly, Sullivan and van den Meerssche point towards what they call an “emergent *dispositif* of speculative suspicion,”<sup>38</sup> flowing from the aim of pre-emptively identifying “risks” that are as-yet unknown. As they show, however, suspicion does not fall equally, as they problematize design features that, among other potentially detrimental implications, may ultimately exacerbate the risk of racial bias at the border. In sum, their article showcases the empirical and critical insights that can be gained by tracing how legal norms, as well as algorithmic and data practices are co-produced.

Legal infrastructures are also a particularly productive lens to understand processes of regionalization. Andrea Jiménez Laurence and Florian F. Hoffmann examine the *malleability* and ever-evolving character of the intersecting and entangled laws used and reshaped by cross-border movements in Latin America. Their analysis points to how legal infrastructures evolve over time as they are enacted in practice, and how thinking infrastructurally about law in this context can help question more conventional, static forms of legal analysis. Cross-border movements in Latin America are particularly illustrative in this context due to the way in which domestic legal instruments, regional rulesets, and international refugee and human rights law intersect—impacting not only human mobility, but also normative developments. To illustrate their argument, Jiménez Laurence and Hoffmann use four vignettes to show how infrastructural entanglements can both hinder and facilitate cross-border mobility. Ultimately, their analysis underlines the considerable amount of agency those on the move have when navigating evolving, overlapping, and often incomplete entangled legal regimes, thereby shaping and reconstituting the normative entanglements themselves in the process.

<sup>36</sup>Christian Brown-Prener & Thomas Gammeltoft-Hansen, *Citizenship as Legal Infrastructure*, 25 GERMAN L.J. 1290, 1292 & 1297 (2024) (appearing in this same Special Issue).

<sup>37</sup>Gavin Sullivan & Dimitri Van den Meerssche, *The Legal Infrastructures of UK Border Control – Cerberus and the Dispositif of Speculative Suspicion*, 25 German L.J. 1308, 1309 (2024) (appearing in this same Special Issue).

<sup>38</sup>*Id.*, at 1313.

Similar dynamics can be identified in relation to the Economic Community of West African States' (ECOWAS) free movement regime. Here, Amalie Ravn Weinrich adds a focus on *gendered obstacles to access*. For the purposes of her article, she distinguishes between legal, physical, and technological dimensions of mobility infrastructures, analyzing gendered impediments to access across all three layers. Drawing on comprehensive interview material conducted with officials at the ECOWAS Commission, she traces the practices and perceptions of those ultimately responsible for managing and maintaining this legal infrastructure. As in the case of Latin America above, her analysis points to the problematization of intersecting legal frameworks, including domestic and regional laws, as well as their intimate ties to physical infrastructure, such as border crossing posts, and digital infrastructures, such as internet access. In conclusion, her article emphasizes the multi-layered, gendered obstacles to movement opportunities, reflecting enduring tensions between policy intentions, infrastructural design ambitions, and continuing challenges ultimately left within the domain of infrastructural "maintenance work."

Drawing on a particular branch of new legal materialism, Thomas Gammeltoft-Hansen and Itamar Mann zoom in on the cruise ship as an object of international law and global capitalism in order to develop a novel take on understanding how both elements shape this particular type of international tourism. Seeking to develop a generalizable analytical framework for legal infrastructures, they offer three main concepts to understand the relationship between "international law *and* infrastructure" and "international law *as* infrastructure"<sup>39</sup>: Platform, object, and rupture.<sup>40</sup> On the one hand, the concept of *platform*, understood as "large-scale webs of laws and materials,"<sup>41</sup> is used to interrogate the conditions based on which particular objects or practices are premised. Here, it is the rules of maritime commerce and transportation that have ultimately enabled the development of the cruise industry as a particularly predatory form of capitalism. On the other hand, a focus on the *object* serves as an explorative lens for charting this normative web, bringing widely different legal regimes into analytical relation. Simultaneously, a focus on the object serves as a corrective to the arguably in-built structural bias in infrastructure studies, and invites us to pay attention to physicality, legal, design and its concrete manifestations—here, onboard the cruise ship itself. Bringing the two together, the concept of *rupture* serves as a final analytical lens for understanding how relations between object and platform are constantly renegotiated and subject to change. In this case, Gammeltoft-Hansen and Mann point towards the COVID-19 pandemic and its major impact on the industry, with early outbreaks taking place onboard cruise vessels, lockdowns bringing the otherwise hypermobile industry to a near standstill, and ultimately exposing its frangible legal underpinnings. Taken together, they thus propose their three concepts as a roadmap for studying legal infrastructures even beyond the specific case of cruise ships.

Mariana Valverde concludes this special issue with a reflective contribution that looks back at an evolving literature on law and/as infrastructure through the lens of her own past research projects. In particular, she showcases the promise of empirical research on law and physical infrastructures. Her work on building contracts for large physical infrastructure projects, for example, has led her to question the promise of democratic accountability and transparency that making such contracts public may hold. Instead, she urges that empirical attention be turned to the fragmented and disordered local solutions and imaginaries that shape and breathe life into such large physical infrastructure projects. Such a focus equally enables moving beyond unhelpful analytical distinctions between the day-to-day operations of infrastructures. Echoing Ramji-Nogales' intervention in this special issue on infrastructural breakdown in relation to the US border, Valverde encourages legal scholars to turn to infrastructure studies for conceptual

<sup>39</sup>Gammeltoft-Hansen & Mann, *Cruise Ships in International Law: Towards a Theory of Legal Infrastructure*, 25 German L.J. 1382, 1383 (2024) (appearing in this same Special Issue); Byrne et al., *supra* note 25, at 1237–38.

<sup>40</sup>Gammeltoft-Hansen & Mann, *supra* note 39, at 1387–1402.

<sup>41</sup>*Id.*, at 1227.

inspiration to make use of the extensive scholarship unfolding on physical infrastructures, and their maintenance and decay across different disciplines, including with a focus on access and marginalization across the Global North and South. At the same time, she emphasizes the need for further attention on law and legal infrastructures within infrastructure and urban studies, ranging from building codes to legal rules on the circulation of materials and ultimately of legal documents themselves.

As the range of contributions to this special issue showcases, the concept of legal infrastructures covers a broad canvas. It can leverage insights from both infrastructural studies and legal theory. By doing so, it is intended to be realized as a conceptual and analytical framework of broad appeal, and is as such relatively agnostic about the methodological direction a researcher chooses to take when using or applying it. At the same time, however, it offers a conceptual toolbox that opens up particular avenues of analysis around themes such as infrastructural harm, maintenance, breakdown and failure, as well as distributive effects, ‘infrapolitics’<sup>42</sup>, and unequal access to legal infrastructures—each of which resonate with wider debates in current international legal scholarship.

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<sup>42</sup>See generally JAMES C SCOTT, *DOMINATION AND THE ARTS OF RESISTANCE: HIDDEN TRANSCRIPTS* (1990). See also Guillaume Marche, *Why Infrapolitics Matters*, 131 *REVUE FRANÇAISE D’ÉTUDES AMÉRICAINES* 3 (2012).