

ARTICLE

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The “Hairs of Hope”: Toward a Fuller Understanding of the Legal, Material, and Social Infrastructure of Infrastructure

Mariana Valverde

University of Toronto, Toronto, Canada
Email: m.valverde@utoronto.ca

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Abstract

The article has the main aim of utilizing the literature on “fragment urbanism” and case studies in infrastructure from the global South to question the notion—dear to the World Bank and the IMF—that the global South ought to follow the North’s lead in aiming at “the modern infrastructure ideal,” that is, a series of integrated nation-wide networks. That model suits certain needs—electricity, phone service, perhaps Internet—but it doesn’t always work, even if funding can be found, for many other infrastructure needs. What is often thought of as “informal” solutions may in fact deploy more site-specific and community-specific techniques and tools.

The article also shows that even in the global North’s most advanced capitalist countries, the lack of overall planning and the absence of needs assessments done before choosing which projects will go ahead mean that infrastructure provision and governance is far more fragmented than the “modern” ideal would suggest. The fact that major projects are usually financed separately, often having their own credit rating, encourages a way of non-evidence based planning that is rife for political interference in infrastructure decision-making. The “art of the deal” is in fact the model for infrastructure projects these days, not the ‘seeing like a state’ that characterized many projects in the post-World War II era.

Keywords: Infrastructure; credit ratings; global North; global South

A. Introduction

This Article contributes to the growing literature on law and/as infrastructure by first noting that modern Western infrastructure is supposed to take the form of integrated networks, but appears to us citizens—and to the public, as well as possibly to the politicians who determine most of the spending—as a series of separate “projects,”—a pipeline of projects, as infrastructure agencies routinely put it.

It then proceeds to debunk, through a rather autobiographical reflection on recent research projects, the legalistic notion that the mysteries of infrastructure projects can be made visible to citizens if the contracts are made public. It is not always lawyers who assume that there is some important and new truth about the state that will be revealed if infrastructure contracts are made public. Often, activists and critical scholars are misled by the existence of “Freedom of Information” mechanisms that promise transparency as the royal road to accountability. As

shown by the author's experiences, in many cases the quest for "the truth" about government intentions and government choices fails even if project documentation is made available. In particular, the documents that may or may not be made available through freedom of information mechanisms do not provide evidence to show that project A is preferable to project B. That is the issue that infrastructure insiders call "project choice." Arguably, that is a far more important issue from the point of view of democratic accountability than the amount of money spent on a project, or the possible future risks that are downloaded to the private sector through the contract.

The promise and the failures of transparency mechanisms are topics to which legal scholars, especially those with practical experience in infrastructure "deals," could in the future contribute, if only to help other scholars as well as opposition politicians and activists avoid dead ends and unfruitful wild-goose chases.

The Article's third and final section draws on recent work in Global South urban studies to argue that what urbanist Colin McFarlane calls "fragment urbanism."¹ Such work can be very fruitful for studies of legal infrastructures, whether conducted either by legal scholars or by non-lawyers who are interested in understanding the legal mechanisms and norms that underpin and sustain infrastructure projects.

Much work on legal infrastructures so far—especially that targeting "big data" systems—tends to assume that surveillance is effective and that, more generally, infrastructures work. But often they fail. There is an emerging body of work, mainly from the global South, that can help shed light on the often empty promises of integrated, large infrastructure networks. Local citizen-initiated infrastructure solutions are often more useful as well as more affordable. Legal scholars would do well to pay attention to the literature on community-based, bottom-up solutions to problems previously thought of as due to "underdevelopment" or as the absence of infrastructural capacity on the part of states.

B. The "Modern Infrastructure Ideal" and its Discontents

What is called "the modern infrastructure ideal" is supposed to consist of large-scale integrated networks, preferably national or else jurisdiction-wide. The German train system, Deutsche Bahn, is one of the rather exceptional actually existing entities that approaches this ideal. Spain and France too have nationally-designed and owned train networks that link most cities and towns and that make car ownership not as necessary as it is in many other countries. That is also the case in much of Northern Europe, where passenger train travel is a normal everyday experience.

However, in many advanced capitalist countries, including all of North America, train service is sporadic and fragmented: This is the case in Mexico, the United States, and Canada. All three countries lack a coordinated, integrated system of intercity passenger trains.²

Nevertheless, even in countries with functioning and still publicly owned networks of passenger trains, electricity, sewage and drinking water, infrastructure is today routinely presented to the citizenry not as it perhaps was during Roosevelt's New Deal—as a national, planned project—but rather as a series of somewhat isolated "projects" or "deals." The press and other mass media contribute to this fragmented representation of various "deals": What we call "the news" appears to readers and viewers as a series of disconnected articles on different topics, authored by different journalists and usually published for specific audiences, often exclusively local. There are scholars and opposition politicians who present a broader, more comprehensive view of infrastructure

¹Colin McFarlane, *Fragment Urbanism: Politics at the Margins of the City*, 36 ENV'T & PLAN. D: SOC'Y & SPACE 1007, 1007 (2018).

²Jimmy Thomson, *Testing Out the Tren Maya, Mexico's New Train that Connects the Yucatán*, WASH. POST (Mar. 2, 2024), <https://www.washingtonpost.com/travel/tips/mexico-train-tren-maya/> (finding that recent controversies about the "Tren Maya," an upscale train service meant primarily for tourists visiting the Yucatan Peninsula, underline the rarely mentioned fact that both during the colonial period and after, Mexico never did create a functioning, affordable, passenger train service for the whole country).

planning and delivery; but on the whole the scale of the single “deal” prevails. Even scholarly studies of infrastructure consist mainly of site-specific and time-specific case studies, as found for example in *Urban Studies*, a leading journal in the field.

This fragmented representational format facilitates what I call the “one project at a time” scale of infrastructure planning. At this scale, official representations of infrastructure needs tend to elide the distance that separates actual community needs from the plan—or just the futuristic image—of this or that particular project—or, in Trump-speak, “deal.” Each deal or project is presented as eminently useful. There is almost never a justification for why certain needs felt by certain people are to be met by new infrastructure, whereas other needs go neglected.³ Infrastructure needs are after all indefinite, and meeting one community’s needs might frustrate another community’s wishes. But official discourse presents deals or projects as self-justifying—a representation that relies on the fact that all infrastructure projects meet some of the needs of some local communities. Even new highways designed to further urban sprawl do address some real issues faced by car-dependent commuters, despite the increased carbon emissions and other negative effects that they notoriously have.

Further, and importantly, in this age of tax avoidance, tax abatements, and tax cuts, appealing to “infrastructure” serves to justify public expenditures. The phrase used is always “investing in infrastructure.” Investing is in fact the same thing as spending, but by calling a bridge, a hospital, or a transit line an investment—rather than an expenditure—government presents itself as a wise steward of the public interest.

Other institutions including private for-profit corporations also take up and reproduce the eminently useful language of “investing in infrastructure.” Even private equity funds buying up urban real estate regularly deploy the language of “investment,” failing to mention their goal which is profits. Notably, even tax-cutting Donald Trump, when he was president, famously talked a great deal about investing in infrastructure, though little was done along those lines. The joke was that every week was infrastructure week, but that week kept receding into the future. In both the public and the private sector, the language of investment evokes wise future-proofing, something quite different, in official discourse, from taxing citizens and then spending the proceeds on collective goods and services. The role of official representations of infrastructure—which are routinely reprinted without critical commentary in the media—in promoting the “one project at a time” scale is notable, though seldom mentioned either in general infrastructure studies or in studies of legal infrastructures. Pictures of fancy high-speed trains, for example, are presented in such a manner that the vast public expenditure required for such projects is hidden from view. The images do not simply represent the future, they appear to *justify* political choices.⁴ How a picture—especially of something that does not yet exist—can act as a justification, taking the place of data and evidence, is one of the many mysteries of infrastructure talk. In the realm of public health we are accustomed to seeing studies that document communities’ needs and even prioritize them, but in the realm of infrastructure planning one almost never sees prior needs assessments. Projects appear on the horizon as new and old politicians emerge and make promises. But there is no overall plan and no consensus on a method for ranking different needs.⁵

³For more on the “one project at a time” scale of contemporary infrastructure planning, see MARIANA VALVERDE, *INFRASTRUCTURE: NEW TRAJECTORIES IN LAW* (2022). See also Mariana Valverde, Fleur E. Johns & Jennifer Raso, *Governing Infrastructure in the Age of the “Art of the Deal”: Logics of Governance and Scales of Visibility*, 41 *POL. & LEGAL ANTHROPOLOGY REV.* 118, 118 (2021); Mariana Valverde & Anirudh Goel, *Beyond the Legal Status of Cities: A Framework for Analyzing Multi-Level Governance*, 13 *J. INDIAN L. & SOC’Y* 146, 146–65 (2022) (providing a broader discussion of scale in relation to jurisdiction, as it pertains to the power or powerlessness of municipalities, an almost universally neglected topic in infrastructure planning).

⁴See VALVERDE, *supra* note 3, at 65–76 (describing an analysis of the never built high-speed train lines promised by Boris Johnson when he was Prime Minister in Britain).

⁵STARLINK, <https://www.starlink.com/us> (last visited Oct. 2024) (explaining that one example concerns the dire need for fast and affordable Internet access experienced in rural and northern Canada, parts that now either have no access at all or are

Of course, there's a direct link between the kind of urban planning images, usually architectural drawings, though sometimes watercolors or pictures made with other media, that are familiar to all citizens, because they are posted, often on large billboards, along city streets, and the images of future infrastructure that also dot the urban landscape and the pages of newspapers. Such images routinely simultaneously represent and appear to *justify* certain urban developments about whose financing and implications for the locals and for other areas of the city or the country citizens are told nothing. Infrastructure planning, even in the most advanced economies, is simply not evidence-based.

Apart from the “one project at a time” scale of infrastructure planning—which is arguably largely due to the fact that each infrastructure project, at least larger ones, is a single financial entity, with many projects issuing their own bonds and having their own credit rating—the fragmentation of infrastructure needs, absent nationally planned infrastructure networks or even jurisdiction-wide infrastructure plans, means that the much-vaunted modern Western infrastructure ideal is constantly receding from view, even within politicians' discourse in the global North. Occasionally climate disasters such as floods or hurricanes prompt political bodies to at least look as if they're addressing the issues that huddle under the vague notion of “infrastructure resilience.” But by and large, climate catastrophe or not, citizens are promised this or that project, with large-scale presidential “vanity projects” being all too common in presidential political systems.

Whether those projects that rise to the top of the agenda in different jurisdictions, due largely to political factors, are best situated to meet the needs of ordinary people is seldom investigated, even by critical journalists. And so much of the information available about projected infrastructure takes the form of drawings and diagrams, without any financial or legal details, that it would be difficult to judge whether the projects are indeed “value for money,” as the financiers say.

In prior research I noted that two very large Canadian provinces—British Columbia and Ontario—lacked any kind of overall infrastructure plan; when planning was invoked at all, the gesture that accompanied the terms “plan” and “planning” merely enabled the presentation, often by means of architectural drawings and photos of politicians in hard hats, of possible or promised future individual projects.⁶ “Progress” was represented visually by photos of promising holes in the ground surrounded by construction equipment.

Whether a particular future hospital in town X—rather than, say, a community clinic aimed at low-income residents or Indigenous people—was indeed the best way to meet the province's health needs is never explained by the infrastructure agencies in each of the two provinces—in keeping with information practices common across jurisdictions. Citizens by-and-large have little recourse but to accept whatever infrastructure projects do get implemented. And in Ontario at least, people who query infrastructure and design choices made in the location or in the financing process are often dismissed as “NIMBYs” (“Not In My Backyard”). NIMBYs were classically white middle-class homeowners who disliked public housing as well as environmental hazards, but now the NIMBY designation is often levelled at activists who query infrastructure plans.

limited to very expensive and very slow satellite connections). That need for what has become an essential service has long been neglected by Canadian governments, and also by the private sector, which remains focused on serving cities and dense agglomerations. The only “plan” that has been mooted by the federal government is enabling Elon Musk's low-orbit satellites. Whether that is indeed the best solution, never mind the fact that the Canadian government would be thereby contributing to Elon Musk's unjust enrichment, has not been treated as a topic for political discussion.

⁶See generally Mariana Valverde, Jacqueline Briggs, Grace Tran & Matthew Montevirgen, *Public Universities as Real Estate Developers in the Age of “The Art of the Deal”*, 101 *STUD. IN POL. ECON.* 35 (2020) (explaining that this is the case both for the arms-length infrastructure agencies that provincial governments have set up and public institutions that act as major urban developers, such as universities). The article, however, fails to closely examine the many futuristic drawings of buildings that litter the university's website, and that are generally thought of—without evidence, as far as I know—as proven ways to attract more students, especially fee-paying international students, who are presumed to have no access to human sources of intelligence, and access to only websites. *Id.*

Citizen activism is in fact hampered, in every jurisdiction I know, by the lack of cost-benefit analyses or other evidence-based methods for public policy choices. Without publicly available studies and cost-benefit analyses it is not possible to question governmental choices. In any case, few citizens who are not major contractors in their working life can give an informed opinion on whether a particular infrastructure should cost \$300 million or \$500 million. The scale of major infrastructure projects, including the financial scale, is such that ordinary citizens cannot make informed judgements, especially given the notable absence of costed potential alternatives. A citizen might know how much their own house is worth, and could judge whether a home in their area is overpriced or underpriced, but has no basis to judge whether a sports arena or a hospital should cost X many millions or Y millions.

The drawings and the watercolors of what does not yet exist but is promised to the citizenry—often with great fanfare—are ubiquitous. Every urban infrastructure project depends largely, for its political persuasiveness, on such images. Arguably such representations act more to both glorify and even justify the choices made by politicians—and/or by the private sector—than to provide evidence that would back up the choice of infrastructure projects and of their relevant details.

One source of critical analyses has come from administrative law scholars. Administrative lawyers, for example, have for some time now criticized the prevalence of “public-private partnerships,” most notably, in part because the active participation of private corporations either in fact imposes or is seen by relevant actors as requiring far more secrecy than is the norm in public spending in contemporary liberal democracies.⁷

An example from my recent, not yet published, research is perhaps helpful. While pursuing information on my own university’s capital project planning, in the spring of 2024, I was told by a senior official that even the proposed budgets for particular new buildings are now treated as confidential until financial close—even though proposed budgets have to be approved in advance by Governing Council, where one-third of the members are appointed by the provincial government, supposedly to ensure external accountability. Up until a few years ago budgets—though never any actuals—were routinely included in the publicly available minutes of Governing Council. The reason given to me by a university capital projects official in 2024 for the confidentiality of budgets, which routinely include large sums of public government money, alongside university money and in many cases donor money, was that even the budgets—never mind the specific method of financing—contain commercially sensitive information. This is questionable, however, because the budgets have never contained specifics, utilizing instead generic categories such as “federal government contribution,” “donation made,” or “donation sought.”

C. Making Contracts Public: A Tactic for the Performance of Transparency

The proliferation of government claims about the necessity for secrecy and confidentiality is a well-trodden topic amongst scholars investigating dimensions of what we used to call “the state,” and hence it is not necessary to cite many sources here. The focus instead is on the claim—which is legalistic but is arguably more common among citizen activists than among contract lawyers—that making contracts and other official infrastructure documents public would enable some measure of accountability. That such documents might shed light on why one project was chosen over others is an unspoken assumption behind the requests; the other main assumption is that only transparency guarantees the absence of corruption—though in general the spectre of corruption is far more prominent in Global South infrastructure projects than in those in the North, regardless of evidence about particular projects and their governance.

⁷See Ellen Dannin, *Crumbling Infrastructure, Crumbling Democracy: Infrastructure Privatization Contracts and Their Effects on State and Local Governance*, 6 NW. J.L. & SOC. POL’Y 47, 47 (2011).

When starting to research infrastructure, I too was under the impression that the details of contracts, if made public, would help in citizens' quest for accountability on the part of infrastructure agencies and other large-scale urban developers. But two research experiences, one pertaining to the city of Toronto's partnership with the private developer Daniels for a major downtown redevelopment project, and one pertaining to the mega infrastructure agency Infrastructure Ontario, proved that my initial idea about what would enable transparency and accountability—which was likely rooted in my own “legal consciousness” as an activist citizen, not through any contract law expertise—was quite off the mark.

In respect of the first research project, my co-author and I asked for the constitutive by-laws of all the mini-corporations that had been created to enact the public-private partnership that the city of Toronto pursued to redevelop an aging and highly stigmatized public housing project, Regent Park. We were initially denied access to the relevant documents, even though the by-laws of the first of the series of mini-corporations had been made public, and we therefore pursued an appeal, via the Ontario Information and Privacy Commissioner (“IPC”). The IPC agreed with us that the Toronto Housing Company, the titular representative of “the public” in the partnership, had to provide the documents we sought, because it was subject to the same Municipal Freedom of Information Act that applied to the city proper.

But our victory turned out to be pyrrhic. We found out that there were indeed twelve mini-corporations that had been created—as is the norm,⁸ one for each part of the large project. But when we finally got permission to read the constitutive by-laws of the many mini-corporations, each targeting one block or thereabouts, it turned out their content was identical to the by-laws of the first mini-corporation created to underpin the project legally. The experience was hence chastening. The two lead researchers in that project, incidentally, were social scientists, not lawyers. We realized what perhaps a good contract lawyer could have told us in advance, namely that what the by-laws of the corporation say is not especially informative.⁹

My second relevant experience took place when I started researching infrastructure planning and delivery by the main infrastructure agency in English Canada, Infrastructure Ontario (“IO”). This agency prides itself on its transparency: It has long posted the actual contracts for projects online, on its website, which is publicly accessible. It equates posting the contracts online with transparency and accountability.

I attempted to hire a law student as research assistant for one summer, to help me decipher the meaning and significance of the IO contracts. I failed in this attempt, mainly because law students prefer to take on summer legal work with law firms. I then hired an urban studies young scholar with a Master's in Economics. He and I spent most of a summer on the IO website, poring over the many contracts posted online. That turned out to be a naïve decision.¹⁰ It turned out that: (1) The contracts were so lengthy—500 or 600 pages—that reading them was extremely time-consuming—this is what journalists call “a document dump”; and (2) that the contracts, which had virtually no information about the specifics of the project, consisted almost completely of boilerplate assigning various, usually unlikely, risks to either the government agency or the private contractor—or, more commonly, to the consortium of for-profit firms.

Occasionally appendices were included that had some locally specific information—for example, the particular Indigenous nation that had legally to be consulted beforehand. But appendices to the contracts were not routinely posted along with the contracts. And someone with inside knowledge told me, some months later, that the contracts did not in fact have the financial

⁸Years later, I became friendly with a local developer specializing in high-rises and commercial properties, who told me that creating a series of mini-corporations was the normal way to proceed to set up the legal infrastructure of public-private partnerships.

⁹See generally Aaron Moore & Jordana Wright, *Toronto's Market-Oriented Subsidized Housing PPPs: A Risk Worth the Reward?*, 69 CITIES 64 (2019).

¹⁰See Mariana Valverde & Aaron Moore, *The Performance of Transparency in Public-Private Infrastructure Project Governance*, 54 URBAN STUD. 689, 689 (2019).

information that journalists and opposition politicians might seek. I was told by a knowledgeable insider that it was routine for IO to agree to a hefty “post-contract fee,” and information about the amount of that fee, or for that matter about the existence of such fees, was not publicly posted anywhere.

That discovery of ubiquitous boilerplate led to one of the conclusions in the article with Fleur Johns and Jen Raso, the one questioning the claim that public-private partnerships are inherently “innovative.” If the contracts signed by Infrastructure Ontario to enable the building of new hospitals, new courthouses, and new roads and bridges turned out to be virtually identical, despite the very different purposes of the infrastructure in question, there was little or no innovation—other than the choice, made somewhere up the political chain of command, to pursue partnerships with the private sector; but that was a political choice embedded in the very mandate of Infrastructure Ontario, so that too was a kind of political boilerplate. It turned out, we discovered, that IO had come to re-invent the very bureaucracy that it sought to displace by recourse to the private sector’s supposed ability to be innovative and responsive to local needs.¹¹

Further, the use of boilerplate for contracts meant that little if any input from local communities was taken into consideration. The process of writing and signing the contracts was shrouded in deepest secrecy. I became curious about the actual person whose signature figured at the bottom of the contract, because that seemed to me to be politically relevant information. But there was no human individual, no “natural person,” only a minister’s rubber stamp signature.

Later on, when pursuing information—fruitlessly, so nothing was published on this—about my own university’s contracts with software providers, especially Microsoft, I was unable to determine who signed the contracts. I suspected from my general knowledge of the university’s inner workings that it was the chief of the information technology department who signed it, not the president of the university, the provost, or the titular head, the chancellor. But the contracts were still in force when I made my request, and so I was not able to obtain them even though the university, as a publicly funded, at least in part, body is subject to the provincial freedom of information law that applies to provincial government itself. Today, even the budgets for particular capital projects, which used to be made public routinely, are treated as confidential, and discussed at Governing Council only *in camera*. They are released only after financial close, often several years after the initial budget is drawn up.

Which brings me to a point that leads into the final section, namely the relevance for legal and socio-legal scholars, of the emerging literature on infrastructure from the global South. This fascinating relatively new literature, by and large, shows the usefulness of “make-do” local initiatives that seek to meet some pressing infrastructure needs without attempting to follow the modern infrastructure ideal.¹²

D. The “Hairs of Hope” in Latin American Urban Housing

When on a visit to the city of Bogota, the friends who picked me up at the airport explained, as we were driving to my hotel through what looked to me as endless slums, that the rebar that protruded upwards from many of the apparently self-built houses that made up the “slums” was locally known as “the hairs of hope”—*los pelos de la esperanza*. They explained that a family might

¹¹See Valverde et al., *Governing Infrastructure in the Age of the “Art of the Deal”*, *supra* note 3.

¹²See JAMES SCOTT, *SEEING LIKE A STATE: HOW CERTAIN SCHEMES TO IMPROVE THE HUMAN RACE HAVE FAILED* (1999) (claiming that this is the best known critique of the efforts by some global South countries to emulate the modern infrastructure ideal, often through megaprojects that fail to meet the most pressing local needs). Scott’s work appealed to urban studies scholars and activists who had already been influenced by Jane Jacobs and her campaign against the New York City “modern infrastructure” czar Robert Moses. Together, Scott and Jacobs contributed to the “small is beautiful” trend in urban design, as well as to the proliferation of for-profit urban design firms promising to turn “spaces”—abstract, homogeneous, soul-less—into “places”—seen as full of local lived experience. Michel De Certeau’s work was also influential along the same lines, but was never as popular.

have had enough money, at one point, to build an extra storey, a second storey that would turn their shack into a house, but that a third storey or a rooftop patio to complete the proper house had to await another influx of cash. In the meantime, however, the rebar that might help future construction plans, because it was there already, was known as “the hairs of hope.” The hairs of hope were the material embodiment of the hope that future cash influxes would materialize, sooner or later, and that at some distant point the poor family might enjoy a proper, finished house. In other words, the hairs of hope were an important component of the Colombian poor people’s housing infrastructure imagination.

I heard the same phrase in Mexico City, utilized precisely in the same way. I do not know whether any Colombians visited Mexico City and disseminated the terminology; the possible influence of Bogota urban planning on Mexico City is a highly politicized topic—in particular, both cities make the claim that they invented Bus Rapid Transit, known as “*el Metrobus*” in Mexico City and as “*el transmilenio*” in Bogota, so they seem to be two different objects, but they are in fact the same. It would thus perhaps take a whole new research project to uncover the “true” origins of the phrase “hairs of hope.”

But the phrase, whatever its origin, underlines something that Global South infrastructure scholars have been pointing out for years, though with no perceivable influence on Western studies of legal infrastructures. Colin McFarlane, a British scholar who has long worked in Africa, has been calling for a “fragment urbanism”¹³ that takes the fragmented, often micro-local solutions that arise within communities, rather than being imposed from the political center, and his approach is in keeping with much global South work in urban studies and infrastructure studies.¹⁴ That approach is largely in keeping with work collected by British urban geographer Stephen Graham, in the anthology *Disrupted Cities: When Infrastructure Fails*.¹⁵ That collection, which does not separate the global North from the South—and includes, for example, a wonderful article on the problem of Londoners dumping used cooking fat from their chip pans down the toilet, forming blockages in the sewers known locally as “fatbergs”—became extremely influential in undermining the prestige of the “modern infrastructure ideal” of large, expensive, integrated networks. The collection opened the door for many studies documenting bottom-up local solutions to infrastructure problems, from electricity provision to public toilets, and has been heavily cited since its publication.

While some of this work emphasizes the particularities of the global South, other work—perhaps more relevant for European legal and socio-legal scholars—follows the “Disrupted cities” model in refusing to categorically separate “modern” or Northern cities from cities in the South, but studies both—relative—successes, not just failures and post-construction problems. Jennifer Robinson’s notion of “ordinary cities” was a pioneer in this regard,¹⁶ and there’s a broad array of recent work that, in keeping with the move to deconstruct the North-South binary, does not seek to separate those infrastructures that were either planned or imagined to meet the “modern infrastructure ideal” of large well-integrated networks from those innovations that are more bottom-up, informal and inventive—even if they are also rather precarious in often depending on particular local people to run and maintain them.¹⁷

¹³See McFarlane, *supra* note 1, at 1007.

¹⁴See generally CITIZENSHIP AND INFRASTRUCTURE: PRACTICES OF CITIZENS AND THE STATE (Charlotte Lemanski ed., 2016); GRAMMARS OF THE URBAN GROUND (Ash Amin & Michele Lancione eds., 2022); *Special Issue*, 40 INT’L J. OF URB. AND REG’L RSCH. 1 (2016) (highlighting Aiwha Ong, Andres Luque-Ayala, Anyana Roy, Achille Mbembe, and AbdouMaliq Simone as key authors in this rapidly expanding literature).

¹⁵STEPHEN GRAHAM, *DISRUPTED CITIES: WHEN INFRASTRUCTURE FAILS* (Stephen Graham ed., 2009).

¹⁶JENNIFER ROBINSON, *ORDINARY CITIES: BETWEEN MODERNITY AND DEVELOPEMENT* (2006).

¹⁷See ANDRES LUQUE-AYALA & SIMON MARVIN, *URBAN OPERATING SYSTEMS: PRODUCING THE COMPUTATIONAL CITY* (2020) (finding that this anthology, highly relevant to legal studies of digital infrastructures, shows that the Benthamite ideal of total centralized surveillance has been seldom implemented, for political perhaps more than for technical reasons). As the book documents, Rio de Janeiro was one of the first cities to buy an “urban operating system” from IBM, but the functioning of

Many interesting studies from the global South, on such topics as creating public toilets that fill very pressing needs—especially women’s and girls’ needs—but do not require large outlays of capital could be cited as examples of the kind of “fragment” urbanism that might be a better way to meet infrastructure needs in the global South than the top-down megaprojects that James Scott famously documented years ago. Top-down megaprojects were from the 1960s onward denounced by prominent urbanists such as Jane Jacobs, but the rise of neoliberalism also constituted a serious brake for any project based on the “modern infrastructure ideal.” The current climate catastrophe is showing very vividly that many large and expensive infrastructures, built in the heyday of the “welfare state” and the post-War World II decades of prosperity, have been allowed to fall into disrepair, and in some cases are simply unable to work well as climate disasters such as hurricanes and flash floods proceed with regularity.

Personally, I would favor an approach to studying infrastructures, legal and not so legal, that does not assume that everything in the Global North is orderly, rational, and well-funded,¹⁸ and does not thereby assume that by contrast, Global South cities are inherently disorderly. The “planet or slums” discourse has run its course, it seems to me, especially now that various social, economic, and health crises in the global north have resulted in unprecedented levels of homelessness and precarious urban housing. The “hairs of hope” that I saw as indicating “slum” were perhaps not signs of disorder but rather signs of something far more positive, signs of hope, literally, hope that in the future poor families will have proper, solid homes.¹⁹

In conclusion: Legal scholars who are now interested in infrastructure will perhaps have to read more urban studies literature than they might have expected. Empirical studies of public toilets, desalination plants, or informal-economy methods for getting connected to the electricity grid seem to be irrelevant for legal scholarship, at first glance. But it is mainly within urban studies that infrastructure studies are going beyond both the technical and the normative, and helping to promote studies that do not marginalize either the global South or poor people’s communities within the global North.

Normative legal work, as found for example in much administrative law, tends to assume that there’s an optimal way of meeting social needs, whether the values most prized are types of technical efficiency or democratic values such as transparency and accountability, or a mixture of both. But advanced capitalist societies are everywhere seeing their liberal democratic legal apparatus be challenged and even crumble, while significant countries formerly in the global South, mainly China, have come to have large areas where modern infrastructure prevails and poverty has largely been pushed to the rural margins.

Fortunately some legal scholars, including those represented in this special issue, are losing their fear of empirical research, and engaging with work, whether from urban studies or

this centre of calculation turned out to be quite limited. I have observed that large cities with complex bureaucracies often fail when attempting to create a semblance of integrated data management: the city of Toronto, where I live, is certainly a case in point. In Toronto, traffic data is kept quite separate from data on households—such as water-meter readings, tax records, etcetera—and the transit agency has its own software and its own data, quite separate from that of the city proper. Different departments of the city, not to mention arms-length quasi-government bodies such as the housing company and the transit agency, guard their IT and their data zealously, and do not readily share either with other departments or with the public at large. Some data sets are branded as “open access,” but in practice these cannot easily be utilized by anyone besides tech firms.

¹⁸See MARIANA VALVERDE, *EVERYDAY LAW ON THE STREET: CITY GOVERNANCE IN AN AGE OF DIVERSITY* (2012) (explaining that documenting how the city of Toronto enforces its by-laws, during a time before homeless encampments emerged, taught me that even when no visible disorder exists on sidewalks, parks and streets, rationality is not exactly the dominant rationale of Global North city government).

¹⁹AUSTIN ZEIDERMAN, *ENDANGERED CITY: THE POLITICS OF RISK AND SECURITY IN BOGOTA* (2016) (finding that a detailed study of the city of Bogota’s environmental risk management system shows that risks to people’s safety can often be re-imagined so that it is the poor people themselves and their building practices that are seen as risky). See also LUIS ESLAVA, *LOCAL SPACE, GLOBAL LIFE: THE EVERYDAY OPERATION OF INTERNATIONAL LAW AND DEVELOPMENT* (2015) (referencing another deep study of Bogota urban management which focuses on “green infrastructure” but does not directly engage with the literature on infrastructure, but could be seen after the fact as making a signal contribution to it).

science-and-technology studies, that does not divide the world, a priori, into the Global South on the one hand and the Global North on the other hand—a binary that is deeply Orientalist—and is also out of keeping with recent research on how people actually use and build infrastructures.

The work represented in this special issue also tends to eschew the other binary that has haunted critical legal studies for decades now, the binary that sets law up against materiality. As Bruno Latour and many others using Actor-Network Theory have shown, legal infrastructures are fascinating precisely because they contain, simultaneously, norms—legal as well as customary—human beings, social and political institutions, and non-human objects. On the one hand, that law is indeed material is no longer a radical minority view within legal scholarship.

Infrastructure studies, on the other hand, could benefit from more attention to legal and quasi-legal infrastructures building codes, for example, and the large array of technical “standards” that governs the production and the utilization of most ordinary objects, including houses, bridges, roads, automobiles, etcetera. Many infrastructure scholars do not include law within their purview, or else they simply ignore law and hence fail to note that every material infrastructure is shaped as much by the standards and norms that prevail for that space in that jurisdiction as it is by material considerations, such as choice of building material. Irus Braverman is one of numerous legal scholars who has long been documenting the vast spaces that are both normative and technical/material, from trees in Israel Palestine to zoos and sea corals.²⁰

The study of legal infrastructures within legal scholarship as well as socio-legal interdisciplinary studies could thus be extremely helpful to urban studies and other scholars, including those that focus on the circulation not of personnel and social groups but rather of documents—the anthropology of documents being a relatively new field that has made signal contributions to our understanding of such topics as “transparency” and “legality.”

I know from my travels in academies around the world that there are many people like me—a socio-legal scholar who never darkened the doors of any law school—who very much look forward to future conversations about infrastructures and infrastructure planning and non-planning.

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²⁰See generally IRUS BRAVERMAN, *PLANTED FLAGS: TREES, LAND AND LAW IN ISRAEL/PALESTINE* (2009); IRUS BRAVERMAN, *WILD LIFE: THE INSTITUTION OF NATURE* (2015). Riles is a legal scholar who pioneered a synthesis of Science and Technology Studies/Actor-Network Theory. She has a vast body of work and has supervised many doctoral students who use similar methods and approaches.