The anthropology of infrastructure
The boom and the bubble?

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Abstract: This article engages with the constitution of the anthropology of infrastructure as an autonomous subdiscipline. Rather than laboring in the service of demarcating a new field of study, anthropologists, I argue, should strive for a critical deconstruction of the contemporary infrastructural moment. In the first part of the article, I engage with the arguments in favor of infrastructure as an analytical lens by focusing on their treatment of relationality and materiality. I pinpoint the limitations of these approaches and argue that their epistemological and theoretical assumptions blunt the critical potential of anthropological studies of infrastructure. The second part of the article looks at theoretical alliances that favor connecting the anthropological study of infrastructure with a critical analysis of the production of nature and the built environment.

Keywords: anthropology of infrastructure, historical-geographical materialism, infrastructure, materialism, ontology, relationality
While the anthropology of infrastructure is hardly a cohesive or unitary subdiscipline, as proliferating research suggests these attempts to delineate the analytical and epistemological specificity of the field have been generative and have further encouraged the proliferation of research situated under the umbrella of this growing, if unsettled, subdiscipline. Holding together an eclectic body of works is the proposition that the anthropological research of infrastructure can function as an autonomous field that draws its coherence from the importance of infrastructure not simply as an empirical object but as an analytical lens that favors theoretical renewal.

In this article I critically engage with the arguments that elevate infrastructure from a research object to an analytical lens. Rather than laboring in the service of demarcating a new field of study, anthropologists, I argue, should strive for a critical deconstruction of the contemporary infrastructural moment. In the first part of the article, I engage with the arguments in favor of infrastructure as an analytical lens by focusing on their treatment of relationality and materiality. I pinpoint the limitations of these approaches and argue that their epistemological and theoretical assumptions blunt the critical potential of anthropological studies of infrastructure. The second part of the article looks at theoretical alliances that favor connecting the anthropological study of infrastructure with a critical analysis of the production of nature and the built environment.

The anthropology of infrastructure: The emperor’s new clothes?

The expansion of the anthropology of infrastructure has been explained in diverse ways (Appel et al. 2018; Boyer 2018; Harvey et al. 2017; Venkatesan et al. 2018). Downplaying longer legacies of engagement with infrastructure in anthropology, most commentators trace it to the 1990s search for an ethnography of infrastructure within science and technology studies, reworked and grafted upon developments connected to actor-network theory, the ontological turn, posthumanist approaches and a general concern with more-than-human worlds.

One recurrent explanation for the boom in infrastructure studies places it as part of a broader focus on the post-Keynesian conjuncture, characterized by infrastructural decay. In Boyer’s summary, “the turn to infrastructure could be viewed as something like a conceptual New Deal for the human sciences—a return of the repressed concerns of public developmentalism to an academic environment that has, like much of the rest of the world, become saturated with market-centered messages and logics over the past three decades” (Boyer 2018: 224). An alternative line of explanation sees interest in infrastructure as an expression of the anti-anthropocentric turn (Boyer 2018; Harvey et al. 2017; Hetherington 2019b). In this broader and more diffuse explanation, the anthropology of infrastructure emerges in the era of the Anthropocene and echoes the search for overcoming the constitutive dualisms of human-centered, modernist paradigms. Infrastructure projects appear as culprits and carriers of developmentalist modernity but also as part of the solution in the search for decentering humans as privileged epistemic subjects. The relational nature of infrastructure is said to favor the open-ended study of heterogeneous, unsettled realities of more-than-human assemblages.

Attempts to define the subdiscipline by favoring some analytics at the cost of others have come up against a real and troublesome heterogeneity in ethnographic studies of actually existing infrastructures, as I discuss next. This partially accounts for the level of generality at which the analytical unity and relevance of the field have been formulated. Moreover, the programmatic statements in favor of infrastructure as a privileged analytical lens are frequently at odds with the very findings of anthropologists studying contemporary infrastructural development.
What exactly is the anthropology of infrastructure?

The recent attempts to draw the boundaries of an anthropology of infrastructure as an autonomous subdiscipline with its own rules of engagement run up against the longer history of ethnographic attention to infrastructure. Programmatic interventions and specific research projects are divided between those that situate anthropological interest in infrastructure as novel and somehow unusual (Dalakoglou 2016; Howe et al. 2016) and a majority that typically acknowledge a slightly longer history of engagement with infrastructure in anthropology and beyond. But with acknowledgment typically reduced to cursory remarks about a misrepresented set of references, the difference between acknowledgment and silencing claims about novelty remains largely inconsequential. As other commentators have noticed, there is a tendency toward “downplaying the history of the discipline rather than embracing it” (Castro 2019: 104) and cursory references to anthropology’s past engagement with infrastructural objects are yet to gain weight as a thorough intellectual history of the long-standing tradition of ethnographic attention devoted to infrastructure, as both object and metaphor.

In relation to the contemporary boom of research devoted to infrastructure, the anthropology of infrastructure appears as both cause and effect. Attempts to draw the contours of the subdiscipline emerged from the proliferation of individual studies while also fueling it. To an important degree the proliferation of studies seems to be not so much the consequence of anthropologists paying attention to the class of empirical objects conventionally designated as infrastructural but rather the result of the license given to expanding the notion of infrastructure. Rather than being troubled by the progressive loss of specificity and analytical substance of the term infrastructure, anthropologists have frequently not only embraced but celebrated the dissolution of definitional boundaries: “As we see it, however, this conceptual-empirical proliferation and divergence is just what makes infrastructure so exciting at the present moment” (Harvey et al. 2017: 6). Thus, we find ourselves in a situation in which virtually everything can be classified as infrastructure, including roads and dams (Harvey and Knox 2015; Mains 2012) to railways (Bear 2007), water and associated technologies (Anand 2017; Hughes 2006; Von Schnitzler 2017), nature (Carise 2014a), people (Simone 2004), and sociality (Elyachar 2010). Hesmondhalgh’s observation about the infrastructural turn in media studies, where “terms such as hard, soft and material are bandied around so freely that infrastructure could potentially cover any kind of system at all” (Hesmondhalgh 2021: 137) could just as well apply to the anthropology of infrastructure. Infrastructure has become a catch-all category for a multiplicity of relations, phenomena, and systems the specificity of which anthropologists have long labored to delineate. This vagueness, it has been argued, has been generative of inquiry. But one of the questions that arises is to what degree this generative character is a trick of the eye owning to the rapacious character of the very definition of infrastructure. Put otherwise, the elevation of infrastructure from empirical object to analytical lens has on its own recast the world as an infinite ensemble of infrastructural relations and phenomena.

This makes the silence about previous trajectories of infrastructure as a guiding metaphor in the social sciences ever more troubling. The underlying research concern for the anthropology of infrastructure seems to be not what infrastructure is but how and when does something function as infrastructure. Even attempts to define infrastructure imply that everything is potentially infrastructural.1 Take, for example, Larkin’s useful definition of infrastructures as material structures and networks that “facilitate the flow of goods, people, or ideas and allow for their exchange over space” (Larkin 2013: 328). In the same article it gives way to the more elusive “infrastructures are matter that enable the movement of other matter,” and “their particular ontology lies in the fact that they are things and also the relation between things” (Larkin 2013: 328).
It has been also argued that infrastructure is “no longer invoked only as a conceptual tool, but as itself the object of ethnographic engagement” (Anand et al. 2018: 11). This reading ignores the longer history of ethnographers engaging with the study of infrastructural ensembles as well as the programmatic unwillingness to specify the boundaries of the concept. This is a development that has been resisted to a certain degree, and anthropologists seeking to understand contemporary infrastructural build-up have warned that “infrastructure loses its analytical advantage if everything becomes infrastructure” (Schweitzer et al. 2017: 60). And while this article argues along these very lines, I maintain that as a diagnostic of the developments in the field, the idea that infrastructure features primarily as an empirical object is inaccurate.

The current attempts to characterize the specificity of the anthropology of infrastructure highlight not so much the salience of infrastructure in the contemporary world and its political and economic conjunctures but the supposed analytical and epistemological affordances of the infrastructural lens. The move toward positing infrastructure as a self-reliant lens elevates infrastructure from object and concept to an epistemological frame and a sui generis ontology. The case for a transformation of anthropological studies of infrastructure into an anthropology of infrastructure with its own rules of engagement primarily mobilizes two broad families of arguments. First, that attention to infrastructure carries with it a needed focus on materiality. And, that infrastructure works as a heuristic of relationality.

From ethnographic engagement with infrastructure to an anthropology of infrastructure

Materialism and ontology

Scholars have insisted that infrastructure offers a welcome reorientation of our attention toward materiality and expands our focus from the human to the non-human (Anand et al. 2018; Harvey et al. 2017; Hetherington 2019a). Building on calls such as the one for a poetics of infrastructure (Larkin 2013), the anthropology of infrastructure seems to increasingly leave the door open for a narrow understanding of materiality that stresses its sensual dimension. The vitalist materialism of the anthropology of infrastructure rehearses many of the propositions of the ontological turn. It recognizes the more-than-human character of the worlds anthropologists inhabit and seeks to replace humans as privileged epistemic subjects with a distributed notion of agency that encompasses all forms of matter. Infrastructure, it has been argued, provides a critical standpoint against the epistemological shortbacks of the anthropocentric lens (Boyer 2018).

The call for a poetics of infrastructure seems to non-conflictually share space with an expanding hyper-empiricism. This “metaphysics of association” (Brenner et al. 2011) has a hard time dissociating itself from a “naive objectivism” (Sayer 1992 quoted in Brenner et al. 2011: 233) in which the blurring of the boundaries between the human and the non-human goes hand in hand with the proliferation of actants. Matter, from this perspective, is agentive before it is determined, and neither power nor ideology, appear as immanent to it. The attempts to bring in the non-human into the analysis leave the door open for a transition from anthropocentrism to pervasive anthropomorphism, where the effort to pay attention to the non-human is subordinated to what is ultimately a category in which the specifically organic is lurking: agency. In the move to expanding the notion of agency not only to other forms of life but to all forms of matter, the anthropology of infrastructure appears at risk of replacing the stress on the uniquely human with a world that is nothing but human potentiality expressed in a myriad forms. To speak of the agency of roads, bridges, and pipes begs the question whether describing all forms of matter in a language meant to capture the specificity of human interaction is truly the way forward (see Hornborg 2017).
The anthropology of infrastructure favors the analysis of the productive capacities of infrastructure rather than their produced nature. This, I maintain, derives out of the mostly implicit tendency in the new anthropology of infrastructure to substitute a dialectically understood totality for a holism of matter. The holism of matter characteristic of the anthropology of infrastructure is accompanied by important ontological assumptions and epistemological propositions. The stress on infrastructures as dynamic and open-ended assemblages is joined by the emphasis on the unsettled and underdetermined character of infrastructural relations: “the recursive shaping of infrastructure, society, economics and politics offers an image of relations that are a priori underdetermined, and thus subject to experimentation. As previously noted, we are unable to say what infrastructure, politics and the relations between them will turn out to be in any concrete instance, since this will be the result of an unfolding experimental process” (Harvey et al. 2017: 12). The concrete instance, we are told, is radically open.

Relationality

Anthropologists of infrastructure suggest that the study of infrastructure favors a focus on relationality, allowing us to follow the way the human and the non-human are brought into complex forms of interaction. Things are “entangled,” orders are “fractal,” objects have agency, and new relational forms are continuously emerging. The idea of relationality at work in much of the recent ethnography of infrastructure draws heavily on an actor-network theory inspired view of relationality, by which sets of heterogeneous objects are seen to be in continuous interaction with each other (for examples, see Fischer 2005; Jensen 2015; Jensen and Morita 2015). The social space of this interaction is defined by infinite permutations, generating potentially infinite complexity. Hence, the literature’s taste for long lists of objects: “humans, soil, windmills and bacteria,” or whatever variation on a potentially endless list is the type of language which clearly signals that ultimately the language of relationality is another form in which the belief in irreducible heterogeneity is expressed.

A subsequent archeology of complexity sets out to document as many of the permutations as possible. But far from attesting to ontological pluralism, this view of complexity as heterogeneity ends up producing a “distinctly flat ontology” (Moore 2015), where heterogeneity appears as a leveler of difference. This, paradoxically, manifests itself as a form of hollowed-out essentialism, where objects have been reduced to emptied entities trapped in unpredictable network realignments. This does not take us very far from the old image of billiard balls clashing against each other on the pool table of the ontological turn.

To be sure, the intention to go beyond this type of network hyper-empiricism is there, and words such as “recursive” or “looping” signal a desire to understand how different objects internalize effects from other fields. The question, however, is how successful can such an attempt be when grounded in the assumption of irreducible complexity and heterogeneity? When the assumption of heterogeneity is matched by the one of a priori underdetermined objects, what we essentially face is a situation in which the world is encountered as given. Infrastructural ensembles remain collections of entities. This, in effect, is a form of relationalism that tends toward a synchronic view of phenomena and integrates history only in a superficial capacity. It would be unfair to claim that such an ethnography of infrastructure is not interested in process because, declaratively and practically, it is. But the problem is that the view of process that it ultimately ends up with is a highly problematic and limiting one. The situation we face is essentially one in which we have moved from classifying things to classifying relations between things (according to individual preference these might be designated as “objects,” “actants,” “ensembles,” “assemblages,” etc.).
The widespread view that infrastructural arrangements are essentially a way of capturing a relational ontology frequently slips into the stronger, if not always explicit, assumption that “a relational and dynamic ontology is per se a critical endeavor” (Lettow 2017: 113). This is an idea strongly reminiscent of the postulates of new materialism. The problem, as with new materialist theories more broadly (Lettow 2017; Rekret 2016), is that the anthropology of infrastructure seems to smuggle in a totalizing notion of matter, in which the internal heterogeneity of assemblages is held together by what is ultimately a primordial reading of matter and a belief that infrastructures are in a sense pre-social. As much as analysts might insist otherwise, it is inevitably so when infrastructure is extended to mean “the material conditions of possibility for human or indeed for other than human life” (Venkatesan et al. 2018: 2) or when infrastructures are treated as systems that support life projects (Venkatesan et al. 2018: 2, my emphasis). Over and over again, the case for infrastructure as an analytic confirms its dependence on the elemental, primary or foundational: “literally providing the undergirding for modern societies” (Larkin 2013: 328, my emphasis).

An adjacent to the arguments about infrastructure as a privileged site for a relational heuristic are those that characterize the field as interested in process and dynamics of change. The question is not merely whether the analytical instruments of the subdiscipline favor a study of process but that systematically the stress seems to be on the contingent dimension of infrastructural development. The virtually ubiquitous stress on multiplicity, emergence, “uncertain, ambiguous, and unstable outcomes” (Harvey and Knox 2015: 6) has led to overshadowing the analytical and political consequences of the systemic and stable character of infrastructural development. Thus, the research agenda of the subfield appears poorly equipped to draw conclusions about infrastructural ensembles as “specific and far-reaching coherences” (Appel 2019: 28) embedded in contemporary regimes of accumulation.

**Circulation and connectivity**

In the case for an anthropology of infrastructure, relationality also shows up as a question of circulation and connectivity. This occurs in studies of infrastructure that are more consistently preoccupied with identifying the political-economic formations into which infrastructures are embedded. But understanding the connection between infrastructures and circulation emerges out of the same concern for developing a heuristic of relations and relationality. The focus on circulation leads to two types of arguments which share intuitions on the contemporary meaning of connectivity, circulation and exchange: about infrastructure as a lens onto contemporary forms of accumulation and about infrastructure as an instrument for constructing a “problem-specific group of sites” (Carse 2016; Carse 2014b).

Researchers of infrastructure have argued that “rather than positing a system with a demarcated inside and outside or assuming a hierarchically organized set of nested scales (e.g., person < household < village < region < state < world), tracking infrastructure can help the researcher locate a problem-specific group of sites” (Carse 2016). The importance of avoiding such rigid spatial and scalar representations notwithstanding, it is hard to see in what ways this is a specific merit of infrastructural studies, with such an approach being the provenance of multi-sited ethnography. Furthermore, what is unsatisfactory in this type of argument is the remarkably partial engagement with anthropology’s fertile trajectory of engaging with global connections and of looking at the multiscalar production of cultural phenomena within world-historical processes. Thus, seminal works that have taken as central the way anthropological studies can address global networks, production, circulation and exchange (Mintz 1986; Roseberry 1989; Trouillot 2011 [2003]; Wolf 2010 [1982]) are, at best, mentioned in passing and their legacy approached in a cursory way. In the relatively didactic insistence that connections can be well observed through things
that connect what is quite likely to go wrong is the substitution of the physical appearance of connection, disconnection, and exchange for broader processes of circulation.

Other arguments about infrastructure consider it a privileged lens for observing contemporary processes of financialization (Bear 2017; Venkatesan et al. 2018). Laura Bear has convincingly argued in favor of understanding the connection between contemporary forms of governance, infrastructural investment, and the movement of capital across circuits of exchange (Bear 2017; Venkatesan et al. 2018). Advocating for infrastructure as a “historically emergent form” (Venkatesan et al. 2018: 5), she has posited the necessary connection between infrastructure and vectors of accumulation. The stress on an “analytical deconstruction of the infrastructural moment” is inspired by her own wording of the difference between an approach that naturalizes the contemporary form of infrastructural development and one that seeks to critique “the forms of accumulation that are going on behind the scenes” (Venkatesan et al. 2018: 31). Asserting her debt to Marx’s treatment of circulation in the second volume of Capital, Bear has insisted that the study of such circulatory networks would shed light on historically changing relations of inequality. While the argument I advance here is broadly consistent with this position, I remain wary of the tendency to conflate exchange and circulation.

As David Harvey has shown in a classic study of Marx’s theory of circulation, the “circulation of capital” refers to “capital moving through all of its phases, one of which is the sphere of circulation—the time when finished commodity is on the market in the course of being exchanged” (Harvey 2006 [1982]: 84). Capital must move through the sphere of circulation in order to be realized as capital. Still, the total process of its circulation, sometimes referred to as the valorization process, includes the realization of money capital through production, the realization in commodity form of productive capital, and the realization of commodities as money. Exchange, and the type of movement that infrastructure allows us to observe, are just one of the phases of capital’s circulation. Adequate treatment of the circulation of capital must include those moments in the circulation process which are not primarily infrastructural.

Questions of circulation are not limited to the field of infrastructure. Contemporary interest in circulation and movement has produced its own subfields, most prominently mobility studies. But as Deborah Cowen has noticed, this type of focus on circulation, pervasive also in the anthropology of infrastructure, is essentially the common sense understanding of it as the movement of things, people, and data. But this notion of circulation “stands in some contrast to the notion at work in the study of the circulation of capital through its different forms” (Cowen 2014: 14). Circulation as the movement of capital through different phases fuels debates about the political economy of crisis, and these debates, per Cowen, have been removed from those that focus on the physical movement of things. The case for a critical study of logistics is built precisely on the argument that the intersection of the circuits of capital and the circulation of “stuff” is critical for understanding the articulation of contemporary political-economic space. But the case for an anthropology of infrastructure has hardly touched upon this intersection, and it has rather selectively ignored the critical ethnographic interventions that have derived their conclusions by studying infrastructure at the intersection of the circuits of capital and material flows (Aljem and Strava 2020; Appel 2019; Cowen 2014; Franquesa 2018; Khalili 2020; Kwan Lee 2017; Murray Li 2018). That such findings do not reverberate in the case for an anthropology of infrastructure is not surprising, it appears rather as a necessary consequence of a subdomain that has posited infrastructures as contingent and open-ended ensembles. The structural and immanent relations between the flow of capital and infrastructural developmentalism can be hardly registered under this postulate.
What does the anthropology of infrastructure miss?

As a critical endeavor, the anthropology of infrastructure cannot escape the need to confront itself with the current infrastructural moment. Infrastructure in the conventional sense of material installations and systems that support productive and reproductive activity has indeed been a central dimension of the post-Keynesian conjuncture. However, the evidence does not live up to sweeping diagnoses about “paradigm change” in the direction of state retrenchment, as it is frequently argued (Dalakoglou 2016). A new infrastructural developmentalism has been booming alongside calls for infrastructural investment and green new deals (Schindler and Kanai 2021). This has brought with it the search for new ways for private capital to turn infrastructural investment into a source of profit as well as the reconfiguration of state-capital relations (Buier 2020; Kalb 2020; O’Brien and Pike 2015; O’Brien et al. 2019). Critical geographers, economists, and financialization scholars have shown that infrastructure is a buzzword not only in academic circles but also in public policy and global economic forums (Tooze 2018; Torrance 2009). In spite of the contradictory dynamics that traverse it, we are certainly witnessing a global infrastructural rush in which the state remains a central actor (Kwan Lee 2017; Schindler and Kanai 2021).

The anthropology of infrastructure has struggled to position the contemporary infrastructural developmentalism in relation to the state-capital nexus. Broader assessments of the flow of capital into infrastructure as a route of investment are confused and frequently pulverized into contradictory statements. Thus, anthropologists have noticed that “capital investments in large-scale infrastructures are generally viewed as good business. Indeed, the short-term benefits of new labor opportunities and the longer-term promise of growth have led governments across the world (not just developing nations) to prioritize infrastructural projects in partnership with private capital as the primary response to global recession” (Harvey and Knox 2015: 4). In the same text this observation is immediately followed up by the idea that infrastructural forms today appear less solid, less secure, and that we can witness “an awareness of the vulnerability of infrastructures as public assets at a time of diminished state investment” (Harvey and Knox 2015: 4). And while the task of anthropology does not necessarily have to be to reconcile the potential contradiction between processes operating simultaneously, a higher degree of specificity that would at least allow us to draw the contours of infrastructure as a politico-economic formation would certainly be desirable. But faced with very basic questions, such as are we witnessing decreased or increased state investment, or what does it mean that we seem to be simultaneously witnessing both, the infrastructural lens does not seem to be able to put things into perspective.

That the anthropology of infrastructure as a programmatic endeavor does not appear to have the strength to scale up in its understanding of infrastructure’s embeddedness into the global economic conjuncture is not necessarily surprising. Attempts at scaling-up theoretically seem to favor a focus on the political and cultural character of infrastructural developmentalism at the cost of advancing a critical political-economic understanding. The anthropology of infrastructure has favored the category of modernity at the expense of a critical engagement with capitalist processes, to the point of airbrushing capitalism out of the picture, even in analysis that claims itself as Marxian (Boyer 2018). Flying in the face of all evidence about the contemporary massive flow of capital into infrastructural development, some have gone as far as to suggest a complete and unproblematized reversal of the base-superstructure model. It has been thus argued that “infrastructural entities are initiated by the superstructure” and that the time is ripe for “turning the Marxist infrastructural analysis on its head” (Dalakoglou 2016), further confirmation that the metaphors of an anthropology of infrastructure remain constrained by that which they purportedly seek to overcome. The
closer one stands to the theoretical postulates of the anthropology of infrastructure the likelier it seems that the focus on the form of the political and the “political orders that predate it” (Anand et al. 2018) eclipses the degree to which infrastructures are central to the very fabric of global capitalism. This seems to be in part a recursive effect of the very theoretical selections the anthropology of infrastructure favors. The insistence on infrastructures as open-ended, unstable, contingent, etcetera is, in fact, hard to reconcile with the current attempts to stabilize social, political and economic formations through infrastructural investment. Infrastructural permanences and infrastructural violence are salient aspects of the contemporary conjuncture (Murray Li 2018; Rodgers 2012; Rodgers and O’Neill 2012) that cannot be adequately addressed through the epistemological and ontological postulates of the anthropology of infrastructure.

Nonetheless, in disjuncture with the emerging theoretical propositions of the anthropology of infrastructure, ethnographers studying infrastructure have continued to enhance our understanding of contemporary infrastructural development and its centrality to the global operations of capital. With questions of representation and meaning in sight, they have made important contributions to our understanding of how infrastructure figures in the attempts to stabilize capitalist formations (Appel 2019; Dunlap and Jakobsen 2020; Franquesa 2018; Hornborg 2019; Kwan Lee 2017; Leivestad and Makkula 2021). Yet, the theoretical postulates of the anthropology of infrastructure largely exclude these findings. Thus, one could hypothesize a growing disconnection between a subdiscipline that seeks to define itself by defining infrastructures as “open-ended structural forms” (Harvey and Knox 2015: 6) and the growing record of the intrinsic violence of infrastructural capitalism, as built within anthropology and beyond. The unwillingness to not only attend to the open-ended, contingent, and unstable character of infrastructural processes but also engage with the degree to which these are embedded in “proliferative, powerful, and systemic” capitalist formations (Appel 2019: 4) blunts the critical edges of the anthropology of infrastructure.

**Toward a critical engagement with the infrastructural moment**

What are anthropologists to do, then, faced with the current infrastructural moment? And what can anthropological engagement with infrastructure contribute to anthropological theory? One suggestion has been that when treating infrastructure “as the material conditions of possibility for human or indeed for other than human life,” the question is “less about how a system comes into being, than it is about the life worlds that such systems sustain and/or destroy” (Venkatesan et al. 2018: 1). My argument is that a critical deconstruction of the contemporary infrastructural moment must be skeptical of such a view and it must actually embrace a preoccupation with the generative principles out of which infrastructural objects and relations emerge. This, however, must be understood not as a matter of identifying origins, but as a concern with the inherently political and ecological nature of fixed capital. A critical engagement with infrastructure must confront it as a “produced production force” (Ekers and Prudham 2018). While anthropological concern with infrastructure should definitely not reduce infrastructure to its economic moment, it will not be served by circumventing the relationship between capitalism, capitalist crises, and fixed capital formation.

To assimilate into infrastructure all material conditions of possibility for life is a move that erases the rise of infrastructure as a historically specific form of human-led intervention into the built environment. Paradoxically, although this move has been largely built on the stated need to avoid the pitfalls of economic determinism and structuralist and Marxist orthodoxy, it looks as it is ready to repeat one of the latter’s notorious errors: the representation of social life in terms of a rigid and hierarchical architectural metaphor. To be sure, most anthropologists of
infrastructure claim to want to avoid such a representation. The question, however, is if while thinking about infrastructure as a category that assimilates all material conditions of possibility for life, we are indeed able to produce a satisfactory representation of the interaction between the human and the non-human and of the mediations of human-environment relations. In its insistence that infrastructure is all forms of materiality and the corollary step of referring to all forms of materiality as infrastructure, it seems that the anthropology of infrastructure’s antidote to overcoming the pitfalls of the base-superstructure model is to allow the base to assimilate the superstructure. And in its desire to do so while breaking away from economic determinism the anthropology of infrastructure stands ready to discard one of anthropology’s most important contributions to the study of human-environment relations: the materialist treatment of ideas. That this is done in the name of a supposed interest in assembling together the human and the non-human, the material and the immaterial, remains inconsequential as long as the specific way of doing it undermines the very objective it supposedly serves. In what is perhaps one of the most influential contemporary treatments of dialectics, David Harvey, echoing Bertell Ollman, takes up the problem of permanences as historical bundles of relations. Commenting upon the limits of studying the world by a fixation on things and systems, he observes “the difficulty of examining change in subjects from which it has been removed at the start” (Ollman 1990: 32 cited in Harvey 2000: 62). This is precisely the fate of an anthropology of infrastructure that prioritizes objects and heterogeneity over process and history. Against the hyper-empiricism of an ontological materialism of substance, anthropologists seeking to engage with infrastructural development should strive for a relationality of process.

**Historical-geographical materialism**

Such a dialectical view of relationality or relational treatment of process is already at work in a materialism alternative to the one favored by the anthropology of infrastructure: historical-geographical materialism. The crucial differences between historical-geographical materialism and an ontologically inflected materialism is the precedence the former gives to processes over things, the inseparability of matter and representation and the insistence that part and whole are integrated within a dynamic totality. Historical-geographical materialism sides with, rather than doing away with what can appear as a form of “radical historicism” (Mann 2009), namely the “emphasis on the historical [and geographical] origins of the things themselves and that more intangible historicity [and geographical particularity] of the concepts and categories by which we attempt to understand those things” (Jameson 1981: 9 quoted in Mann 2009: 339). The consequences for a critical deconstruction of the infrastructural moment are manifold. A defining one is that a historical-geographical materialist engagement with infrastructure refuses reification. Rather than endowing things with explanatory power it seeks to identify the processes and generative principles out of which things (objects, systems, actants, etc.) are constituted (Swyngedouw 1999). Historical-geographical materialism does not derive its propositions from the primacy accorded to matter but from the insistence that ideas matter (Mann 2009) and, consequently, is unwilling to severe the connection between epistemological and social critique. Such an approach to infrastructure cannot circumvent the problem of infrastructure as a “produced production force” and must situate it within the metabolic relation between humans and nature. The temptation to substitute historical-geographical materialism for Marxism should be resisted. While it is within the Marxist tradition that the most important formulations and reformulations of historical-geographical materialism have taken place, historical-geographical materialism also stands apart from the scientist or ontological versions of materialism derived from the Engelsian tradition (Lettow 2017; Mann 2009; Schmidt 2013 [1971]). As a matter of fact, the latter is closer in
many respects to the new materialism than proponents of either would acknowledge (Mann 2009). In the precedence they accord to the totality of matter and to infrastructure understood as the foundation of all (social) life, they both fall short of advancing the production of an integrated social and natural history.

The anthropological analysis of infrastructure can only offer insights about the circulation of value and human-environment relations by taking seriously the social relations underpinning infrastructural selections. It must recognize that infrastructural development does not stand in a neutral or contingent relationship to capitalist accumulation but is a privileged route of socioecological transformation. Infrastructural development cannot be reduced to its economic moment. Anthropologists are particularly well positioned to understand why a particular route for the circulation of capital is simultaneously an ideological, semiotic, or cultural process and project. Those trying to establish the study of infrastructure as a contribution to anticapitalist theory have warned against the danger of functionalism in tying infrastructural developments to global economic processes (Ekers and Prudham 2017). What is inherently a socioecological process is also a way of securing the hegemony of particular social projects (Ekers and Prudham 2018). But if anthropologists are to offer adequate explanations about the way in which infrastructure internalizes socioecological relations and its implication in the production and reproduction of everyday life, they cannot remain silent about the way in which infrastructure, as a material force and ideological tool, has been a key avenue for the reorganization of territory and the domination of nature in a capitalist world. To remain agnostic about the determinations at work in the current infrastructural boom is to remain agnostic about capitalism’s structural properties.

**The politics of the discipline and beyond**

A critical deconstruction of the contemporary infrastructural moment rooted in historical-geographical materialism does not need to be a linear endeavor. It can build on plural traditions and forge alliances with theoretical developments at multiple levels of abstraction, an already ongoing process. One particularly fertile direction for understanding the implications of theoretical choices in the study of infrastructure is offered by conversations about a Marxian-Foucaultian dialogue in the study of socionatures (Ekers and Loftus 2008; Heynen et al. 2006; Loftus 2009; Swyngedouw 2015). In opposition to an ontologically inflicted anthropology of infrastructure, both the Marxist and the Foucaultian approach are grounded in the stress on the historicity of social formations. A critical dialogue is also facilitated by the shared interest in rethinking the relationship between the material and the ideological, even when this is expressed as perhaps a more narrow relation between the discursive and the non-discursive domains. Both the Marxist and the Foucaultian tradition refuse to assign analytical primacy to a pre-social nature and totalizing notions of matter, and are fundamentally concerned with the way in which historical phenomena internalize power relations. Whether one chooses to draw primarily on the Marxian tradition or on the Foucaultian one, or seeks to confront and make use of their differences through a productive dialogue (Ekers and Loftus 2008), the shared concern lies with the stress on historical selection. Both Marxist and Foucault inspired approaches are rooted in the proposition that the world we encounter did not have to be the way it is. Difference, when approached in either of the traditions, is never merely encountered, it is always produced. And while the passion for positing the two traditions as political enemies is certainly alive, a strategic dialogue and a political synergy is facilitated by the insistence that social and epistemological critique are indivisible. It is only within an overall concern for the way “freedom runs up against nonagency” (Weiss 2015) that critical engagement with infrastructure can properly claim its place within the long tradition of the anthropological study of human-environment relations.
A critical deconstruction of the contemporary infrastructural moment must also seek orientation in the anthropological tradition. Insofar as infrastructure brings circulation to the fore, one place to start is a full recognition of the contributions historical and economic anthropology have made to the study of locally situated, but globally embedded processes of circulation. Critical anthropology has a past of dynamic and path-opening conversations about global processes of circulation (Coronil 1997; Mintz 1986; Roseberry 1989; Trouillot 2011 [2003]; Wolf 2010 [1982]). Not only does the study of process and relational epistemologies have a long legacy in anthropology, so does the conversation about the dangers of a thin understanding of connectivity: “the world of humankind constitutes a manifold, a totality of interconnected processes, and inquiries that disassemble this totality into bits and then fail to reassemble it falsify reality” (Wolf 1982: 3).

In a world in which infrastructure figures so prominently in the reproduction of capital, anthropologists must remain vigilant about naturalizing a language and form intimately tied to processes of expropriation and domination. The exploration of alternatives is an integral part of dialectical thinking (Harvey 2000), but it cannot be done at the cost of silencing the question of how the world we encounter came to be. As David Harvey reminds us, we cannot expect socialist social relations to be produced “out of capitalistic generative principles” (Harvey 2000: 67). Today, capitalism operates in the infrastructural mode. The violence of financial capitalism finds its corollary in the violent re-materialization of surplus capital as infrastructure. If infrastructures are “built networks that facilitate the flow of goods, people, or ideas and allow for their exchange over space” (Larkin 2013), we must start with considering the specificity of circulation and restructuring of space under the current deepening of the subsumption of nature. Critical engagement with the contemporary infrastructural moment and the proliferation of extraction through infrastructural development can be a privileged lens for understanding the overall unity of the circulation process of capital and financial capital’s circulation through space. But whether it is within the confines of the already given that we can foresee the shape of things to come is not a settled question but an open one. The struggle for the actualization of a non-capitalist world must surely start at identifying the kind of forces that prevent it from happening today. Capitalism operating in the infrastructural mode in an era of financialization is one of them.

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Notes

1. And, aside from a few notable exceptions (Carse 2017), the emic trajectories of the concept have been bypassed, thus favoring disengagement from the implications of importing a concept with a life well beyond the disciplinary one.

References


