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## Infrastructure

Darin Barney

As far as I know, the word *Infrastruktur* never appears in the writings of Karl Marx.

Marxists have sometimes substituted “infrastructure” for “base” in the famous “base and superstructure” couplet derived from the preface to *A Contribution to the Critique of Political Economy*: “The sum total of these relations of production constitutes the economic structure of society, the real basis (*Basis*) on which rises a legal and political superstructure and to which correspond definite form of social consciousness” (Marx 1972, see Wuthnow 1993). In popular usage, infrastructure tends to connote physical systems and structures, especially those that facilitate transportation, communication, and the provision of services, but its resonance with the Marxist category of *Basis* is instructive. Just as the economic base of society is comprised of material *relationships* – wage relations, property relations, class relations – as much as it is of material objects, contemporary infrastructure studies take for granted that the “peculiar ontology” of infrastructures “lies in the fact that they are things and also the relation between things” (Larkin 2003).

Infrastructure also bears the qualities of what Marx described as constant capital: “that part of capital which is represented by the means of production, by the raw material, auxiliary material and the instruments of labour [which] does not, in the

process of production, undergo any quantitative alteration of value” (Marx 1978, 202). Infrastructure is constant capital in the sense that it remains in place so that labour, which comes and goes, can continually or repeatedly generate value.

Together, these two oblique references suggest the defining characteristics of infrastructure.

The first is that infrastructures are social relationships *materialized*. Marx calls our attention to the manner in which capitalist relations are invested in, materialized as, and reproduced by infrastructure in the form of constant capital, but the same applies to nearly every other relationship of inequality, exploitation and domination we might wish to consider. It is not a coincidence that the recent turn to infrastructure in the social sciences and humanities was initiated by a feminist. When Susan Leigh Star describes infrastructure as “a substrate...part of the background for other kinds of work,” she implies the subordinate status of women – as providers of the reproductive and restorative labour that regenerates the productive labour (and citizenship) of men – that has persisted throughout modern western history (Leigh Star 1999, 38). Women, which is to say gender relations, were the first form of constant capital, the first infrastructure (Federici 2012). Similarly, relationships of exploitation and disparity between the Euro-American metropole and the Global South were and are materialized in infrastructures of slavery, colonial extraction, production, circulation, and the imposition of sovereign violence (Larkin 2008). Slavery, imperialism, and colonialism (including settler colonialism) operate by transforming racialized peoples and their geographies into infrastructure (Jabari Salamanca 2016). Infrastructures are thus social relations in material form, and so are a primary site for materialist analysis.

The second defining characteristic of infrastructure, suggested by its status as *constant* capital, is a temporal orientation towards repetition, continuity and duration. Infrastructure is what is expected. It is memory made concrete. In satisfying expectations, infrastructure recedes into the invisibility of routine. This is true even in settings where a lack of certain kinds of infrastructure has, itself, become infrastructural (Simonw 2004). In this sense, infrastructure reifies, transforming the

social relations it embodies into things that appear to be *just there*, beyond the social and outside history.

Nevertheless, infrastructure remains irreducibly political, because it distributes and concentrates resources and advantage, enables and disables mobility (including migration), organizes spatial and temporal relations, and manifests inequality and power. Under conditions variously named globalization, neoliberalism, and the network society, infrastructure is the medium by which capital becomes the state, and by which the state accomplishes itself as an organizer of flows and bases of identity (Easterling 2014). Our friends The Invisible Committee are helpful here: What is it that appears on euro banknotes? Not human figures, not emblems of a personal sovereignty, but bridges, aqueducts and arches [...] As to the truth about the present nature of power, every European has a printed exemplar of it in their pocket. It can be stated in this way: power now resides in the infrastructures of this world [...]. Contemporary laws are written with steel structures and not with words [...]. [P]ower consists in infrastructures, in the means to make them function, to control them and build them. (Invisible Committee 2015, 83-85).

Herein lies one of the many contradictions that constitute infrastructure as historical and political, as opposed to merely technical. In one sense, infrastructure recedes into the invisibility, repetition, and durability of routine, reifying and concealing the contingent social relations it materializes. This is its primary function vis-à-vis capital. However, there are also occasions when infrastructure becomes punctual, when it stands out and is made visible, even thematized. This happens when states and their capitalist partners explicitly invoke infrastructural innovation, renovation and expansion as proof of their legitimacy and promote infrastructure as an object of ideological investment. It happens when public or collective systems of social infrastructure (schools, hospitals, parks, the wireless spectrum, etc.) are withdrawn from the commons and privatized or commodified. It also happens in moments of infrastructural failure – blackout, interruption of service, delayed connection, decay, unexpected detour – when the social relations materialized by infrastructure are suddenly exposed (Bennett 2005). Such failures are often technical,

but they can also be political, as when the gap between infrastructural forces and infrastructural relations is made sensible through political action.

This suggests a third defining characteristic of infrastructure: it is dialectical, a medium of transformative, and even revolutionary, potential (Boyer 2017). Infrastructures are the prevailing social relations materialized, and they contain all the contradictions characteristic of those relations, contradictions that can burst forth at any moment. This means that infrastructure is a medium of political struggle, a struggle over which relationships will repeat, continue and endure in material form which will be contested, and a struggle over the possibility of alternative relationships and infrastructures. As Deborah Cowen observes, infrastructures materialize both empire and resistance:

Infrastructure connects a range of political conflicts which might otherwise seem disparate and discrete: crises surrounding the rights of refugees and the provision of asylum in a world of thickening borders; crises of indigenous peoples' lands and sovereignty in the face of transnational extractive industries; crises regarding local livelihoods in an economy organized through speed and flexibility in trade across vast distances; crises of water infrastructure in Black and Indigenous communities; crises of police and carceral violence that breed profound distrust in the core institutions of the state for communities of color. At the center of these struggles are the [infrastructural] systems engineered to order social and natural worlds (Cowen 2017).

The line that joins the struggles of indigenous peoples, poor migrants, precarious workers, and incarcerated Black populations is the organization of inequality and capitalist power by infrastructure. In its materiality, infrastructure gathers resistant, fugitive political experiences and energies that might otherwise tend towards fragmentation, isolation and dissipation. As the class struggle composes itself, it is likely that infrastructure will be a key medium of that composition.

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