LSE Cities Working Papers
Research Strand 03: Urban Governance and Institutional Frameworks

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Over the last decades there has been a revival of interest in understanding, analysing and theorising infrastructures. In Stephen Graham's (2000) words, 'infrastructure networks are being reproblematized' (p. 185). This has come along with establishing a

closer relationship across social and technical disciplines and fields.

This working paper provides a selective and stylised review of the key and contemporary urban infrastructure debates. The paper's purpose cuts British Academy GCRF Cities & Infrastructure project 'Governing Infrastructure Interfaces' led by LSE Cities, the African Centre for Cities and Addis Ababa University; and second, to explore common

availability have shown (Gillett 2000, Estache and Fay 2009, Klimaszewski and Nyce 2009). Overall, access to infrastructure services in techno-policy work is defined in terms of geography (the distance to access services); affordability (Lee and Floris 2003, Banerjee, Wodon et al. 2008); level of service/carrying capacity (Banerjee, Wodon et al. 2008) and infrastructure literacy (Gillett 2000).

Dovetailing arguments around the scaled provision of public goods (Murthy 2013, Paget-Seekins and Tironi 2016), the Keynesian development model (Graham and Marvin 2001) and monopolistic (public and private) services (Graham 2000, Clarke and Wallsten 2002), universal access was the official infrastructure doxa of modernism, comprehensive planning and the mid-20th century era of public utility monopolies in the West (Coutard 2002). By contrast, universal access was deliberately ignored as

minimising waste flows so they can be absorbed by ecosystems of the immediate urban hinterland, the self-reliant city addresses the city's problems from within and focuses on a city's relationship with its bioregion. Within this bioregion, the integration of

(1999) on the 'ethnography of infrastructure' is one of the most cited texts. It has inspired critical scholars across a range of disciplines (for example, anthropology, planning, geography and political science) to reflect on infrastructure in creative and provocative ways. These authors argue that technical readings of infrastructure create a 'black box' that needs to be opened, interrogated and exposed (Coutard and Guy 2007, Law 2009).

Scholars contributing to the Infrastructure Turn share a deep concern with the instrumentalist, apolitical and ostensibly objective reading of infrastructure common within the technical and policy debates (Ferguson 2012). These authors argue that infrastructure is at the same time political, constructed and contingent. In this sense, infrastructure's development is shaped by embedded, hidden, seemingly mundane and complex power dynamics (Coutard and Guy 2007, Law 2009). The argument is not that infrastructure is both technical and political, but that 'the technical' itself is political.

Urban scholars have joined the Infrastructure Turn. These scholars draw attention to the social and political nature of urban infrastructure and services.

these models. However, structural accounts of urban infrastructure are critiqued for paying insufficient attention to complexity, providing 'crisis' and 'techno-pessimist' accounts and — in their unwavering critique of capitalism — failing to provide space for propositionality and alternatives.

Relational approaches to the study of urban infrastructure are explicitly post-structural (Gandy 2005, Monstadt 2009, Guy and Karvonen 2012). Post-structural critiques reject universalising and reductionist narratives such capitalism/neoliberalism, as well as false binaries, for example between the technical/social human/environment (McFarlane 2011, Anand 2012, Ferguson 2012). They tend to use infrastructure to reflect on social and political topics. For example, McFarlane and Rutherford (2008) show how urban water infrastructure sheds light on governance, and the 'civilized subject' in the post-colonial context. And von Schnitzler (2016) uses water meters - and resistance to them - to unpack the 'social life' of technopolitical infrastructures in South Africa.

Relational approaches stress the importance of seeing urban infrastructure through its relationships. Theorising on the 'poetics of infrastructure', Larkin (2013) reflects on the 'peculiar ontology' of infrastructure as both 'things' and relationships between things. Since relationships are constantly being formed, infrastructure can be seen as 'constantly coming into being', and not as a fixed object. These relationships are understood to be complex. By describing and analysing the complexity of relationships, relational approaches embrace messiness. This work does not seek to impose onto infrastructure a dominant/meta structuring order.

Owing to its diffuse and Foucauldian reading of power, relational accounts of urban infrastructure identify power/politics as multidimensional and multiscale (Young and Keil 2010, De Boeck 2011, Anand iff, S

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