Review of International Studies (2023), **49**: 1, 37–52
doi:10.1017/S0260210522000432

RIS

FORUM ARTICLE

Disruption from above, the middle and below: Three terrains of governance

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(Received 29 September 2021; revised 18 April 2022; accepted 25 June 2022; first published online 21 October 2022)

Abstract

The term *disruption* has become a buzzword for our times, although there is little clarity over what the term means, how it is deployed, and towards what ends. In order to understand the analytical and political stakes that are embedded in the deployment of 'disruption' as a rationale for various sources of upheaval, in this article I argue that these three terrains of disruption should be understood as theories of governance, and term them 'disruption from above', 'disruption from the middle', and 'disruption from below'. Each terrain of disruption embodies different ethoses, actors, and goals: the first connoting elite-driven creative destruction and innovation; the second obfuscating the capitalist imperative that produces world-systemic upheavals; and the third seeking to expose the structures of violence and inequality built into such practices. I illustrate these three terrains through a structural account that traces the popularity of the disruption discourse from its origins to its material application; analyse an illustrative example of the assetisation of infrastructure and how it bureaucratises governance and shifts relations of power; and conclude by examining infrastructural forms of protest against such forms. I argue that the confusion over what disruption means, who exercises it, and upon whom is not a coincidence: rather, disruption's polysemy is structurally produced as a way to disguise ongoing capitalist crisis as a technical problem that market innovations can solve.

Keywords: Disruption; Risk; Finance; International Relations; Infrastructure; Venture Capitalism; Innovation; Dispossession

Introduction

Disruption has become the buzzword of our times. Yet, the meaning of the term, the way it is deployed, and the normative valence of its invocation has varied greatly across contexts. Three instances serve as demonstrative examples.

In a 2011 interview, Amazon's founder and former CEO Jeff Bezos attributed the company's success to its willingness to embrace disruptive change: '[O]ne of our greatest cultural strengths is accepting the fact that if you're going to invent, you're going to disrupt … Don't let [disruption] happen to you. Get ahead of it.'[1] In this first invocation popularised by the Silicon Valley tech industry, disruption describes the techno-managerial innovations driven by firms who seek to discover new sources of profitability that will swallow their competition.

In a second instance, a recent report published by the White House titled 'Why the Pandemic Has Disrupted Supply Chains' examines the 'crisis' that the COVID-19 pandemic has wrought on global supply chains, by ascribing disruption to production shortages and infrastructural failures

[1] Steven Levy, 'Jeff Bezos owns the Web in more ways than you think', *Wired Magazine* (13 November 2011), available at: {https://www.wired.com/2011/11/ff_bezos/} accessed 5 May 2022.

associated with just-in-time logistical systems.[2] In this more vernacular usage, writers deploy disruption in the passive voice. Casting interruptions to global economic processes as merely temporary, such accounts attribute large-scale economic interruptions to mezzo-level contingencies such as ill-prepared infrastructure and labour shortages brought on by unforeseen public health crises, but largely ignore the serial macro-level crises – from climate collapse to slowing capitalist growth – that demonstrate the extended period of financial volatility and decline within which such seemingly temporary crises arise.

In a third instance, anthropologist James Scott argues that where the state has played an emancipatory role in social life, this possibility has only occurred 'when massive extra-institutional disruption from below threatens the whole political edifice.'[3] Activists have employed such acts of 'disruption from below' across numerous sites of struggle: from locking down to tractors and pipelines, to blocking highways, or shutting down major intersections and other urban chokepoints. Here, disruption is a mode of direct action carried out with the aim of obstructing or deterring contentious practices opposed by activists. Often, activists claim that targeting key infrastructure strategically brings 'business as usual' to a halt, stressing that such targets are material expressions of state-sanctioned and economic violence. Rather than a passive act – something that happens *to* people and places – disruption in this context is a deliberate political tactic, one aimed at refusing the forms of immiseration and dispossession that they understand unjust systems to elicit.

Although they employ the same word, at stake in these three forms of disruption are radically different ethoses, actors, and goals: one affirming the normative desirability of elite-driven creative destruction and innovation; another obfuscating the capitalist imperative that produces world-systemic upheavals; and the third seeking to expose the structures of violence and inequality built into such practices. Yet, there is little clarity in existing scholarship about how these different meanings relate and are often deployed against each other. In order to understand the analytical and political stakes that are embedded in the deployment of 'disruption' as a rationale for various sources of upheaval, in this article I argue that these three terrains of disruption should be understood as theories of governance, and term them 'disruption from above', 'disruption from the middle', and 'disruption from below', respectively. I argue that the confusion over what disruption means, who exercises it, and upon whom is not a coincidence: rather, disruption's polysemy is structurally produced.

This article proceeds through each of these three terrains in order to elaborate the following argument: the obfuscation associated with disruption's multiple meanings is symptomatic of a broader tendency to disguise the planetary upheavals brought on by the capitalist world system as technical problems the market can solve. As corporations increasingly employ the competitive ethos of 'disruption from above' to normalise uncertainty and upheaval in the corporate sector, they have also transported this philosophy into other public domains that rationalise technocratic and financialised interventions into public life. Along the way, investments in 'disruptive' technocratic experimentation justify disinvestments in infrastructures of democratic governance: 'disruption from above' removes social functions from the sphere of democratic deliberation or political control, and places them under the impersonal laws of the market, making disruption appear as if it comes 'from the middle', that is, from sources of power that obscured and expressed as distanced infrastructural and bureaucratic forms. In turn, as many aspects of everyday life become subject to the laws of the market and increasingly fall outside the sphere of formal democratic accountability, ordinary people experience fewer outlets for communal deliberation, intensifying popular contestations of capitalist crisis through 'disruption from below'. The analysis provided here is primarily programmatic. I place the upheavals that seem to be a constant feature of contemporary politics within a political economic analysis of

[2]Susan Helper and Evan Soltas, 'Why the Pandemic Has Disrupted Supply Chains', *Written Materials* from *The White House* (blog) (17 June 2021), available at: {https://www.whitehouse.gov/cea/written-materials/2021/06/17/why-the-pandemic-has-disrupted-supply-chains/} accessed 11 April 2022.

[3]James Scott, *Two Cheers for Anarchism: Six Easy Pieces on Autonomy, Dignity, and Meaningful Work and Play* (Princeton, NJ: University of Princeton Press, 2012), p. xiv.

capitalist crisis in order to understand how disruption functions as a theory of governance. In turn, I argue that we should understand the disruptive character of popular uprisings as democratic contestations to these shifting strategies of accumulation and the destructive economic violence they generate.

The initial invitation to this Special Forum invited contributors to consider how we should understand the seemingly ubiquitous proliferation of disruption today, in which, as Nicole Sunday Grove observes, disruption's invocation 'seems to gesture toward an ecclesiastical conviction that our contemporary condition demands all manner of systems and social orders be continually erased and replaced.'[4] This article seeks to contribute to a critical theorisation of 'disruption' by historicising the emergence of capitalist discourses of disruption in order to offer a structural account of its rise. I pose the following questions: Although disruption has quickly become a ubiquitous discourse justifying capitalist intervention into various forms of daily life, how did we get here? Are there structural shifts in patterns of capital accumulation that led to an increasing interest in engineering 'disruptive innovation' as the gospel of economic growth? As disruption invests in particular visions of the future, what becomes sites of disinvestment in turn? In a mapping exercise meant to complement Nicole Sunday Grove's exploration of the 'ambient dispositions' and affective attachments or 'moods' evoked by engineered forms of disruption – as *instrumental*, *justificatory*, and *Promethean* – I offer a map of three terrains of disruption that seeks to understand how disruption has been differentially exercised as material practices and modes of governance. Understanding how disruption is wielded in relation to differing configurations and relations of power, I argue, allows us to map its function as, on the one hand, an anticipatory discourse 'from above' that projects an optimism about the future, and on the other, as a material practice 'from the middle' through which state and corporate actors cement risk, enact displacements, and increase dispossession and containment for the working and poor people situated in their zones of expansion. Yet, both these modes of governance are met by disruption 'from below' – forms of collective direct action whose intervention *against* capitalist forms of disruption from above and the middle are contestations over the form and content of what disruption means, and more pointedly, contestations over the terms of our collective futures. The question of who or what is being disrupted, by whom, and for what purpose, I argue, reveals important insights about how disruption functions as a governing principle.

Disruption from above: Disruptive innovation and techno-optimism

As Nicole Sunday Grove examines in her contribution to this RIS forum, the idea of 'disruptive innovation' was first coined and popularised by Clayton Christensen in his books *The Innovators Dilemma* and *The Innovator's Solution* to describe rapid technological changes that upend longstanding firms' dominance by capturing new markets for consumption.[5] According to Christensen, 'disruptive innovation' marks a paradigm-shifting technological change in which the dominant technology in a given industry abruptly shifts, so that the expertise and scale that a company has built up over decades is suddenly displaced by a commodity that has wider mass appeal to lower-end consumers. Proponents of disruption from above argue that businesses, governments, and industries that rely on settled forms of knowledge and practice will be blindsided by unforeseen changes on the horizon led by more nimble and creative competitors. Rather than wait to be rendered obsolete, proponents argue that businesses should embrace an ethos of creative destruction and actively innovate before one's market position is displaced. The term has since moved beyond business management programmes and into a wide variety

[4]Nicole Sunday Grove, 'Receding resilience: On the planetary moods of disruption', *Review of International Studies*, this forum, p. 1.

[5]Clayton M. Christensen, *The Innovators Dilemma* (Boston, MA: Harvard Business School Press, 1997); Clayton M. Christensen, and Michael E. Raynor, *The Innovator's Solution: Creating and Sustaining Successful Growth* (Boston, MA: Harvard Business Review Press, 2013).

of applications: disruptive innovation claims to solve the problems of educational institutions; healthcare; climate change and energy transition; and sustainable development goals.[6]

Importantly, Christensen's theory of 'disruptive innovation' was not only proffered as an explanatory framework for how 'transformational' technologies pose threats to historical business models (from Kodak's disruption by digital photography to the 'disruption' of computing by laptops); it also sought to be an anticipatory business model, aimed at instituting technological changes to capture new markets for consumption. A key driver of the power of the gospel of 'disruption from above' lies in its normative dimension as an ethos of creativity and progress.[7] As scholars of technology have pointed out, the rise of Silicon Valley's venture capital-driven, digital technological society fetishises a neoliberal ideology of human technical creativity, a belief in the counter-cultural and supposedly communal value of experimentation and economic liberalisation, and a religious faith in the ability of disruptive technologies to bring about unending progress.[8] This 'Californian ideology' is not only Californian. As Lily Irani has argued, such an entrepreneurial sensibility has become popularised globally as a 'normative mode of social life'.[9] Because entrepreneuralism gestures to the 'felt possibility of future productivity or profit', it projects an optimistic discourse of growth in which investing in disruption here, and investing now, is held out as a guarantee of future prosperity that becomes a source of legitimation for investors.[10]

In this way, critics of the theory have argued, disruptive innovation has been turned from a tool of historical analysis into a 'predictive tool' and a mechanism for justifying sweeping technocratic restructuring.[11] For example, Christopher Newfield argues that since its popularisation, disruption has become 'the business world's single most powerful rationalization for disrupting every type of humane condition, such as job security, tax-funded public infrastructure, or carefully nurtured, high-quality product lines.'[12] In practice, disruptive platforms have become a means of systematic discrimination and exploitation: for example, Silicon Valley frequently outsources work to 'ghost workers' around the Global South who contribute to projects in California but are not extended visas to migrate to the US; Uber and Lyft drivers, poster children of the independence afforded by the 'sharing economy', went on strike in 2019 and 2021 in protest of low

[6]Clayton M. Christensen and Henry J. Eyring, *The Innovative University: Changing the DNA of Higher Education from the Inside Out* (San Francisco, CA: Jossey-Bass, 2011); Jason Hwang and Clayton M. Christensen, 'Disruptive innovation in health care delivery: A framework for business-model innovation', *Health Affairs*, 27:5 (2008), p. 1329–35; Charlie Wilson and David Tyfield, 'Critical perspectives on disruptive innovation and energy transformation', *Energy Research & Social Science*, 37 (2018), pp. 211–15; Pratima Bansal, 'Sustainable development in an age of disruption', *Academy of Management Discoveries*, 5:1 (2019); United Nations Global Compact, *Framework for Breakthrough Impact on the SDGs Through Innovation*, United Nations Reports (2019), available at: {https://www.unglobalcompact.org/library/5723} accessed 15 April 2022.

[7]Christensen has himself complained that his theory of disruptive innovation has been stretched beyond its initial intention and become 'almost random … used to justify whatever anybody – an entrepreneur or a college student – wants to do.' See Drake Bennett, 'Clayton Christensen responds to *New Yorker* takedown of "disruptive innovation"', *Bloomberg*, available at: {https://www.bloomberg.com/news/articles/2014-06-20/clayton-christensen-responds-to-new-yorker-takedown-of-disruptive-innovation} accessed 11 April 2022. For the purposes of this article, however, I focus on disruptive innovation beyond its immediate application as a market strategy for firm-based competition, and am rather interested in the public discourse and popular cultural imagination of disruption as a justification for various modes of technological experimentation.

[8]Taylor Dotson, 'Technological determinism and permissionless innovation as technocratic governing mentalities: Psychocultural barriers to the democratization of technology', *Engaging Science, Technology, and Society*, 1 (29 December 2015), pp. 98–120; Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago, IL: University of Chicago Press, 2008).

[9]Lilly Irani, *Chasing Innovation: Making Entrepreneurial Citizens in Modern India*, Princeton Studies in Culture and Technology (Princeton, NJ: Princeton University Press, 2019), p. 1.

[10]Sunder Rajan, Kaushik, 'Subjects of speculation: Emergent life sciences and market logics in the United States and India', *American Anthropologist*, 107:1 (2005), pp. 19–30, quoted in Irani, *Chasing Innovation*, p. 3.

[11]Jill Lepore, 'The disruption machine: What the gospel of innovation gets wrong', *The New Yorker*, 23 (2014).

[12]Ibid.

wages.[13] In this sense, critics argue that 'what tech enthusiasts call "disruption" is in fact almost always directed at forms of organization that preserve a modicum of workers' control over knowledge and the products of labor.'[14] Rationalised as an inevitable economic force, 'disruption from above' thus functions as a mode of governance that rationalises creative destruction in a time of ongoing crisis: crisis is approached not as something to avoid, but as a business strategy to embrace, where one's goal is to pre-empt upheaval, embrace a permanent condition in which disruption is part of everyday life, and turn it into a strategy for future growth.

This narrative of perpetual intervention may sound familiar to scholars interested in the emergence of risk as a standard feature of contemporary society. IR scholars have generated a rich body of scholarship on governance through risk and uncertainty, grappling with how the increased volatility of global financialisation generates not only growing societal uncertainties, but also concomitant efforts to govern through the management of risk. However, it is the contention of this article that we have moved from governance through risk and uncertainty to governance through disruption. While techniques of risk management provide a means of calculating and feigning control in order to render uncertain futures *calculable*,[15] proponents of 'disruption from above' seek to make the uncertainty inherent in innovation understandable, acceptable, and necessary for a productive economy: rather than pre-empting or controlling uncertainties, the age of disruption proposes that the profound anxiety produced by such events can be adequately managed by turning uncertain futures into a permanent feature of economic and geopolitical life. Indeed, as Peter Langley argues in the context of finance, a focus on speculative futures produces uncertain subjects, since it 'fails to bring order to future uncertainty and instead leads to higher anxiety'.[16] In this way, he argues, everyday investors are 'necessarily uncertain subjects in Anglo-American financialization'.[17] This argument dovetails with Nicole Sunday Grove's suggestion in this issue that proponents of disruption do not simply project uncertainty as a way to justify new modalities of governance.[18] Rather, they seek to embrace uncertainty 'as an ends rather than a means to some better outcome', normalising accelerated change in order justify and 'make way for the next mutation'.[19]

Why has economic uncertainty become a normative feature of social life in this way? To understand how the future-facing techno-optimism of 'disruption from above' has become such a dominant and popular response to various crises of capitalism, we need to situate its emergence within contemporary political economic crises. As a discourse and practice of techno-optimist intervention, 'disruption from above' produces a scene of the future whose hold on the present hinges on assumptions of continued profitability and speculative expansion in the context of declining wage rates, stagnating growth, and state disinvestments in the social wage over the last half century. As Giovanni Arrighi has prominently argued, throughout the long centuries of capitalism's evolution, combinations of governmental and business organisations have led to successive cycles of accumulation. While US companies experienced years of productive expansion, expanded manufacturing, and global growth in the long boom between the years 1945–73, in the ensuing years, intensified capitalist competition between advanced industrialised countries began to bring down profits, eliciting a long downturn in the world economy.[20]

[13]Alberto Lusoli and Fred Turner, '"It's an ongoing bromance": Counterculture and cyberculture in Silicon Valley: An interview with Fred Turner', *Journal of Management Inquiry*, 30:2 (2021), pp. 235–42.

[14]N+1 Editors, 'After capitalism', *N+1* (2016), available at: {https://nplusonemag.com/issue-24/the-intellectual-situation/after-capitalism/}.

[15]Sanjay G. Reddy, 'Claims to expert knowledge and the subversion of democracy: the triumph of risk over uncertainty', *Economy and Society*, 25:2 (1996), pp. 222–254.

[16]Paul Langley, 'Uncertain subjects of Anglo-American financialization', *Cultural Critique*, 65 (winter 2007), p. 70.

[17]Ibid.

[18]Grove, Grove, 'Receding resilience'.

[19]Ibid., p. 9.

[20]Giovanni Arrighi, *The Long Twentieth Century: Money, Power and the Origins of Our Times* (London, UK: Verso Books, 2010).

However, rather than witnessing a new cycle of productive accumulation, capitalism in this current crisis has coincided with a period of decline, 'when the tendency to a reduction of global inequalities was not only halted, but sharply reversed', as the 'disruptive' and rapid adoption of cybernetics and digital technologies throw more and more people out of work.[21] Giovanni Arrighi and Beverly Silver proposed more than two decades ago that this period may well mark a *permanent* crisis and decline: as they argue, the global financial expansion of the last quarter of the twentieth century has not inaugurated a new stage of world capitalism.[22] Rather, 'financial expansion itself seems to rest on increasingly precarious grounds', resulting in a 'backlash' that 'announces that the massive redistribution of income and wealth on which the expansion rests has reached, or is about to reach, its limits'.[23] It is no coincidence then that the theory of disruptive innovation, with its promise of profitable futures, emerged and took flight in the early 2000s and especially after the 2007–08 financial crisis, when the precarity of financial expansion, along with the reproduction of life it promised to secure, was revealed. Indeed, Christensen's theory itself begins as an analysis of failing firms, diagnosing a procession of company closures, downsizing, and failures over the last thirty years.

Venture capitalism has played a key role in the expansion of these precaritising and disruptive dynamics. Between the 1970s and 2000s, investment banks turned to equity investments in early stage and emerging growth companies, leveraging profits from one sector and redirecting them towards investments that sought to undermine incumbent capitalists.[24] Although the venture capitalist industry began as a specialised segment of capital market that provided financing to 'high-risk' businesses, it has since become the financial engine behind the growth of a globally exportable 'new economy business model', based on the assetisation of things from intellectual property to energy infrastructure.[25] Through this process, venture capital has become a central economic determinant and a dominant political issue. This process was not only economic; it entailed a powerful institutional and ideological structure that required 'naturalising' neoliberal ideologies of non-intervention in the market, while dismantling of narratives and institutions promoting more egalitarian distributive measures.[26] Governments, increasingly concerned with raising revenues, have invited venture capitalist firms to invest in various state projects, enfolding a marketised ethos of disruption into the daily functioning of public goods.

Placed in this context, although proponents of 'disruption from above' insist that tech entrepreneurialism, and financialisation are innovations that rapidly set capital free and resolve the contradictions of capitalism's inherent tendencies towards crisis, the opposite is true.[27] Disruptive innovation was not a solution to deindustrialisation and declining profitability; rather, we have rust belts and widening social and economic decline worldwide '*because* business and political leaders were taught by consultants like Prof. Christensen that capitalism must destroy in order to advance.'[28] We might thus see disruption as a symptom *and* cause of a broader

[21]Nick Dyer-Witheford, *Cyber-Proletariat: Global Labour in the Digital Vortex* (London: Pluto Press, 2015), p. 142.

[22]Giovanni Arrighi and Beverly Silver, *Chaos and Governance in the Modern World System* (Minneapolis. MN: University of Minnesota Press, 1999).

[23]Ibid., pp. 273–4.

[24]Naomi Lamoreaux and Kenneth Sokoloff, *Financing Innovation In the United States 1870 to the Present* (Boston, MA: MIT Press, 2007).

[25]Kean Birch and Fabian Muniesa, *Assetization: Turning Things into Assets in Technoscientific Capitalism* (Boston, MA: MIT Press, 2020); Dmitrii Zhikharevich, 'Heuristics of Capital: A Historical Sociology of US Venture Capitalism, 1946–1968' (PhD thesis, London School of Economics and Political Science, 2019).

[26]David Harvey, 'Neoliberalism as creative destruction', *The ANNALS of the American Academy of Political and Social Science*, 610:1 (2007), pp. 21–44.

[27]See Christian Marazzi, *The Violence of Financial Capitalism* (Los Angeles, CA: Semiotext(e), 2010); Edward LiPuma and Benjamin Lee, *Financial Derivatives and the Globalization of Risk* (Durham, NC: Duke University Press, 2004).

[28]Christopher Newfield, 'Christensen's Disruptive Innovation after the Lepore Critique', *Remaking the University* (blog) (22 June 2014), available at: {http://utotherescue.blogspot.com/ 2014/06/christensens-disruptive-innovation.html} accessed 1 May 2022.

shift of capital to financial markets, which, following Annie McClanahan, not only temporarily deferred an economic crisis, but also stabilised a political crisis within the US working class: it counteracted the offshoring of manufacturing through the growth of a 'knowledge' sector, it extended ballooning amounts of credit to the working and middle classes to stimulate demand in the place of a stagnating or declining wages, and it funded the shift of investment toward the stock speculation and venture capitalism that funded the tech boom.[29] While the 1990s tech boom and the explosion of 'disruptive' innovators heralded visions of a new California Gold Rush, and while disruption boosters claim 'anyone has a shot at success', the underside has been increasing social inequality, widespread ecocide, land annexation, and premature death.[30]

As Newfield argues, we should understand disruption in this sense not as a theory of innovation, but as a theory of governance: as heavy manufacturing industries and their unionised employees faced the challenges of industrial decline, consultants were empowered by Schumpeterian ideologies of creative destruction to insist that transformation was inevitable, and that layoffs and other managerial strategies of outsourcing and automation were necessary parts of 'creative destruction'.[31] In this enforcement of 'disruption from above', the entrepreneur was to be the engine of new value. Failure and obsolescence become normalised – and normatively desirable – consequences of a disruptive age. In this way, 'disruption from above' acts as a justification of techno-managerial interventions. It pursues a competitive strategy for securing one's future, while normalising the upheaval and often destruction of others. It offers the false promise that a technocratic solution will provide escape from crisis, even as the contradictions of our capitalist totality structures the whole.

Disruption from the Middle: Futurity, infrastructure, and multilevel governance[32]

As I have argued above, practitioners of engineered disruption rationalise the uncertain futures produced by capitalist crisis, and justify pre-emptive intervention on the basis that uncertainty is a permanent geopolitical condition. These top-down dynamics might by now seem relatively familiar to anyone that has witnessed the effects of marketised interventions into formerly public domains, from higher education to healthcare. Yet in practice, these economic rationalities operate through modes of governance that do not *appear* to be top-down at all; in fact, their source of power is often inchoate. In their implementation, disruptive projects might be possible because of the management and capitalist fantasies of disruption of above, but they operate through their own logics. People experience them as a 'disruption from the middle': distributed forms of authority that unbundle governance regimes as they package and assetise public infrastructure into private goods.

In this section, I elaborate on one archetypal way that disruptive innovation materially manifests in 'disruption from the middle' in the public domain: through the assetisation of infrastructure. Infrastructure megaprojects are only one example of how the technocratic interventions produced by 'disruption from above' become actualised in material spaces of everyday life; numerous other sectors provide generative case studies of these dynamics – such as real estate, education, healthcare, water rights, and environmental management, to name only a few. Yet, because they are particularly durable as physical manifestations of financialised assets, infrastructural projects present a compelling example of how uncertainty becomes normalised through

[29] Annie McClanahan, 'Investing in the future: Late capitalism's end of history', *Journal of Cultural Economy*, 6:1 (2013), pp. 78–9.

[30] David N. Pellow and Lisa Sun-Hee Park, *The Silicon Valley of Dreams: Environmental Injustice, Immigrant Workers, and the High-Tech Global Economy* (New York, NY: New York University Press, 2002), p. 2.

[31] Newfield, 'Christensen's disruptive innovation after the Lepore critique'; Joseph Alois Schumpeter, *Capitalism, Socialism and Democracy* (London, UK: Routledge, 1976).

[32] I am grateful to Martin Coward for suggesting this framing.

corporate interventions in long-term physical constructions. In the last decade, infrastructure has become a site of what Stephen Graham and Simon Marvin[33] call 'unbundling': disruptive financialisation has displaced the governance of large-scale sociotechnical systems onto foreign financial banks, promoted economic liberalisation and flexible accumulation as a source of surplus value, and outsourced the provisioning of basic necessities and needs for human societies from the public to the private sector.

This process of assetisation does not simply turn public goods into privately financed projects, but rather reconfigures the public sector, repackaging it in line with market imperatives.[34] Infrastructure evinces 'disruption from the middle' dynamics because they are not only about the construction of roads, railways, or hospitals themselves, but also and more conceptually, they reveal what Michael Mann calls the *infrastructural power* of assetisation: that is, the immense capacity of finance to penetrate the state and civil society through the implementation of logistically political decisions that make it possible for a system to function.[35] Assetisation turns public sector goods into revenue streams, in the process 'unbundling' governance through systems of financial management and concealing the sources of state and corporate power. In so doing, the assetisation of infrastructure produces forms of private intervention that delegate responsibility for accumulation by dispossession and debt from the level of firms and states to distributed managerial networks of subcontracting. This process of obfuscation is what I term 'disruption from the middle'.

Infrastructures have both symbolic power in being a statement of modernity and the economic power to link localities to circuits of global accumulation. In this sense, they have the unique character of being physical presences that '[shape] the present through a politics of anticipation': they gesture towards the felt possibilities of profitability, the modernity of the nation-state, the hopes of its society, and their visions of future growth.[36] States also understand their future to hinge on their connectivity to global trade.[37] In order to attract foreign direct investment in the Global South, states have to modernise not only the instruments of industrial production, but also the supply chain infrastructure that ties places of production to global distribution networks, including railroads, ports, highways, urban amenities for new working migrants, and so forth. Given both the symbolic power of infrastructure to gesture towards modernity and its economic power to provide long-term revenue streams, large-scale infrastructural mega-projects have become a focus of capital investment in recent decades. To make these dreams come true, states have invested vast amounts of public capital into megaprojects, while inviting investors from global infrastructure banks into private-public partnerships (PPP) to finance, construct, and maintain such infrastructures. In the last decade, an infrastructure boom has stretched across the world in nations both large and small. While China's massive Belt and Road initiative has announced $8 trillion dollars in infrastructure financing for a vast network of transportation, energy, and telecommunications systems linking Asia to Africa and Europe, for example, in Equatorial Guinea, a country the size of Delaware, an infrastructure frenzy led in 2013 to the highest investment percentage of GDP in the world in infrastructure construction.[38]

[33]Stephen Graham and Simon Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (London, UK: Routledge, 2001).

[34]Natalia Buier, 'The second coming of rail: The Spanish high-speed rail-finance complex', *Antipode*, 52:6 (2020), pp. 1603–23.

[35]Michael Mann, 'The autonomous power of the state: Its origins, mechanisms and results', *European Journal of Sociology*, 25:2 (1984), pp. 185–213.

[36]Akhil Gupta, 'The future in ruins: Thoughts on the temporality of infrastructure', in Nikhil Anand, Akhil Gupta, and Hannah Appel (eds), *The Promise of Infrastructure* (Durham, NC: Duke University Press, 2018), p. 63.

[37]Parag Khanna, *Connectography: Mapping the Future of Global Civilization* (New York, NY: Random House, 2016).

[38]Asian Development Bank, 'Asian Development Bank Annual Report 2017: Sustainable Infrastructure for Future Needs', ADB Annual Reports, Manila: Asian Development Bank, available at: {https://doi.org/10.22617/FLS189307}; Hannah Appel, *The Licit Life of Capitalism: US Oil in Equatorial Guinea* (Durham, NC: Duke University Press, 2019).

Despite this flurry of construction, infrastructure scholars have noted that the promised timelines of such projects are most often not met: in fact, Ashley Carse and David Knease argue that many, if not most infrastructure projects remain unbuilt and unfinished, and failure is a 'normal state of affairs' in infrastructural spaces.[39] Likewise, Bent Flyvbjerg argues that megaprojects are always 'over budget, over time, over and over again'.[40] Such infrastructural frenzies privilege networks of private accumulation while causing mass displacement and resettlement, worker deaths, territorial conflict, and mass indebtedness.[41] While 'disruption from above' has sought to turn uncertainty into permanent feature of capitalist innovation, these infrastructural projects are thus the material manifestations of its practices: they produce rampant forms of displacement and disruption to lands and livelihoods in the name of financial accumulation which are often unacknowledged in the gospel of disruption.

The disruption that 'infrastructure-driven displacement' elicits arises from the particular relationship between the legal character of large-scale infrastructural projects and their financing.[42] In legal terms, infrastructure is a transversal property claim that involves three elements: First, it involves a territorialisation of space – making a claim on land or water or underground rights. Second, it requires regulatory transversality, such as crossing private property lines and breaching other exclusive claims to land use. Third, because of these two elements, the state is always central to the creation of mega-infrastructures: infrastructure requires forms of property and passageway rights that are closely connected to the state.[43] At the same time, building infrastructure is a costly endeavour, and its large-scale and transversal properties make construction projects so costly that it often requires capital outlays that cannot be secured without state intervention. Because of these attributes, infrastructure is unique in its status as a property asset and a form of financial capital: The state's role in securing legal and property rights provides legitimacy and security for capital's demand to gain territorial mobility, while the longevity of commercial infrastructure – its physical manifestation in a tollable highway or a pipeline – marks its continued capacity to be an enabler of supply chains and expanding markets, and therefore its capacity for protected yields over time.[44] Once built, existing infrastructure also has few substitutes: once a private sector entity finances the construction of one trans-African highway, for example, it is unlikely that others will compete to provide another form of commercial access. The longevity of such a concrete promise on returns over time becomes attractive to financers.

Until recently, infrastructure was understood to be a public good and the responsibility of state provision. After the financial crisis of 2008, however, investors sought to stabilise income streams and secure them from a turbulent stock market. Urban and global infrastructure became a site of alternative investment, seen as a way to generate long-term, guaranteed income streams from public funds and fixed capital. Rather than being seen as a public good or even a commodity, large-scale infrastructures have become 'assetised' – that is, they have come to be understood financially as 'something that can be owned or controlled, traded, and capitalized as a revenue stream.'[45] This shift to the financialisation of public infrastructure has been recent. In the four

[39]Ashley Carse and David Knease, 'Unbuilt and unfinished', *Environment and Society*, 10:1 (2019), p. 11.

[40]Bent Flyvbjerg, 'What you should know about megaprojects and why: An overview', *Project Management Journal*, 45:2 (2014), p. 18.

[41]Paul K. Gellert and Barbara D. Lynch, 'Mega-projects as displacements*', *International Social Science Journal*, 55:175 (2003), pp. 15–25; Zannah Matson, 'Review of the promise of infrastructure', *Society and Space* (7 June 2021), available at: {https://www.societyandspace.org/articles/review-of-the-promise-of-infrastructure}; Austin Zeiderman, 'Submergence: Precarious politics in Colombia's future port-city', *Antipode*, 48:3 (2016), pp. 809–31; Martín Arboleda, *Planetary Mine: Territories of Extraction under Late Capitalism* (London, UK: Verso Books, 2020).

[42]Gellert and Lynch, 'Mega-projects as displacements*'.

[43]Graham and Marvin, *Splintering Urbanism*; Phillip O'Neill, 'The financialisation of urban infrastructure: A framework of analysis', 56:7 (2019), pp. 1304–25.

[44]Nicholas Hildyard, *Licensed Larceny: Infrastructure, Financial Extraction and the Global South* (Manchester, UK: Manchester University Press, 2016); O'Neill, 'The financialisation of urban infrastructure'.

[45]Birch and Muniesa, *Assetization*, p. 2.

decades after the Second World War, the construction and maintenance of infrastructure had been a Keynesian project of postwar reconstruction.[46] From the 1990s to 2000s, however, motivated by budget constraints and the need for capital improvements, states decreased their financial backing of infrastructure works. At the same time, companies that had privatised publicly-owned infrastructure found themselves saddled with loss-making investments from low user fees. Private-public partnerships arose in this context as 'an accounting trick, a way round the government's own constraints on public borrowing.'[47] They were an instrument for the private sector to gain access to public service income streams, opening the way for such entities to extract guaranteed returns through concessions, sale of equity stakes, liens on the state, and other tools to secure compensation. In this way, infrastructure has become a particularly attractive investment vehicle because its quasi-public function allows private firms to extract a guarantee on income streams from states dependent on private financing.

The fact that infrastructural projects are rooted in localities, yet governed by long-term contractual mechanisms and financed from afar produces a disjuncture between specific local geographies and their distant managers. This local 'unbundling' of property happens at urban, regional, and national scales. As Graham and Marvin have argued, the shift towards urban infrastructure investment has created a 'splintering urbanism', in which localities are enrolled into internationalising capitalist political economies.[48] For example, scholars have examined how the Australian Macquarie Bank governs 14 roads in seven countries and three continents through a consortium of financiers, engineers, and operating companies, installing infrastructural power at a distance; or how the extensive Chinese financing of highways, ports, and energy infrastructure, has distributed governance through resource-financed infrastructure arrangements and business partnerships with governments with weak rules of law.[49] Such arrangements place infrastructure in global infrastructure funds managed by financial institutions that pursue accumulation through real estate, while distributing the risks of being invested in place.[50] In the process, they unbundle local forms of governance that had been ways of organising collective life. These infrastructures are constructed and regulated in ways that require complex regulatory agreements between markets and national and local states. As a result, Morag Torrance argues, private market institutions are increasingly 'exercising their authority through global market forces' and setting global standards, giving rise to international regimes governed through the partnership of infrastructure firms, industry associations, and other private actors.[51]

Seeking to hedge their risks, global actors have invested much of the US $3 trillion of private investment in infrastructure in portfolios a few steps removed from direct holdings or construction in brick and mortar projects; rather than investing in direct ownership, investors seek to reduce their risk exposure by investing in intermediary vehicles such as pooled funds, managed by a fund manager on behalf of investors. More than 450 such funds exist, overseen by 270 management companies, raising an estimated $214 billion in infrastructure investments across the US, Europe, Asia, and Latin America.[52] This strategy of distributing risk has consequences for the role that sovereign states play in the governance of infrastructural projects. For investors, diminished sovereign control is a key indicator of 'investment risk': before investing in an infrastructure

[46]Graham and Marvin, *Splintering Urbanism*.

[47]Hildyard, *Licensed Larceny*, p. 29.

[48]Graham and Marvin, *Splintering Urbanism*.

[49]Morag I. Torrance, 'Forging glocal governance? Urban infrastructures as networked financial products', *International Journal of Urban and Regional Research*, 32:1 (2008), pp. 1–21; Tom Ogwang and Frank Vanclay, 'Resource-financed infrastructure: Thoughts on four Chinese-financed projects in Uganda', *Sustainability*, 13:6 (March 2021); Jessica C. Liao, 'A good neighbor of bad governance? China's energy and mining development in Southeast Asia', *Journal of Contemporary China*, 28:118 (2019), pp. 575–91.

[50]Hildyard, *Licensed Larceny*; Torrance, 'Forging glocal governance'.

[51]Torrance, 'Forging glocal governance', p. 5.

[52]Hildyard, *Licensed Larceny*, p. 43.

project, private sector investors demand guarantees on loan repayments, guarantees on contract durations, guarantees against currency exchange rate risks, and other guarantees on compensation to secure the profitability of their investments. Accordingly, to attract investment, states have become increasingly willing to embrace such processes of privatisation and unbundling.[53]

These elaborate forms of financial engineering generate a cat's cradle of financial products that produces a proliferation of third-party advisors and shifted ownership towards consortia-led, global infrastructure funds. Income streams generated through privately owned utilities have securitised future income streams from customers and used the proceeds to increase dividends to shareholders, such as Thames Water in the UK and toll roads in Toronto, Canada.[54] As such, the 'bill-paying public is effectively being packaged and sold' to investors.[55] Because private investors find actual construction projects to be risky, it is the public sector that takes on the risk of heavy investment in building and maintaining the actual highways and water systems. In Puerto Rico, for example, the government agreed to buy back the concessions on a toll bridge if traffic fell short of projected volumes; in Lesotho, a privately financed hospital required the state to invest 51 per cent of its total national health budget; in Indonesia, the UK, and South Africa, governments agree on loan guarantees and bailouts to compensate investors who 'lose out' from governmental policy changes.[56] Such instances of government-backed guarantees resultantly establish regimes of investor rights in which the public interest, state policy and legislation, and localised governance become relegated to the interests of investors.

Seen in this light, the latest efforts to produce spectacular infrastructure projects are part of a global financialised programme in which mega-infrastructure is promoted as offering new profit opportunities and as one of the key antidotes for sluggish economic growth, even as its risks are socialised onto publics.[57] The World Bank and other multilateral development banks have promoted such PPPs as financing vehicles 'critical' for achieving development goals and for the provision of public services, directly financing, providing insurance cover, and creating an 'enabling environment' for PPPs.[58] Worldwide, regions have been preparing pipelines of 'bankable megaprojects' to implement master plans for infrastructure. These projects are not reinvestments in colonial models of infrastructure such as dams and mines that provide transnational capitalist classes with access to Southern resources and markets. Rather, they are disaggregated and financialised structures that disguise sources of authority or control from the public in complex and internationalised contracts whose investors accrue profits from afar on future public flows of money. States take on such risk because infrastructural investments are proleptic symbols of nations' futures: they are models of 'structural transformation' whose spectacular indication of economic growth might kickstart investors' faith in a growing economy, and thus spurring job creation, green economies, and increases in 'value added' in production chains.

Taken together, the assetisation of infrastructure materially manifests dynamics of 'disruption from the middle' in three ways. First, the planetary context of supply chain capitalism enmeshes states within financial arrangements that do not simply turn formerly public goods into private assets. Rather, it shapes the public sector according to the imperatives of global capital accumulation, within which states must compete to establish the mega-infrastructures that they see as making it possible to compete on the world market. This compulsion means that states seek to attract private investment in projects that tie states into long-term relationships with infrastructure banks and other private funds, subjecting decisions that were once the domain of the public

[53]O'Neill, 'The financialisation of urban infrastructure'.

[54]John Allen and Michael Pryke, 'Financialising household water: Thames Water, MEIF, and "ring-fenced" politics', *Cambridge Journal of Regions, Economy and Society*, 6:3 (2013), pp. 419–39; Torrance, 'Forging glocal governance'.

[55]Hildyard, *Licensed Larceny*, p. 47.

[56]Ibid., pp. 13, 34–7.

[57]Antonio Tricarico and Xavier Sol, 'Re-building the world: The structural adjustment through mega-infrastructures in the era of financialization', *Development*, 59:1–2 (2016), pp. 53–8.

[58]Hildyard, *Licensed Larceny*, p. 31.

sector to market criteria based on their profit-making potential. Roads in Puerto Rico that were destroyed during Hurricane Maria, for example, have largely not been repaired, but the fact that this prevents rural communities from access to emergency provisions does not factor in infrastructure banks' assessments of investable opportunity. Second, as I have described above, this market model of infrastructure provision has tied states into long-term financial arrangements with infrastructure banks and other private sector funders that displace investment risks onto public funds; a process that Nicholas Hildyard has called 'licensed larceny'.[59] Finally, given that infrastructure development projects – and the grandeur and 'global' access they promise – are often projects of statecraft and measures of political leadership, financial feasibility is not the primary concern. Rather, politicians engage in megaprojects that gesture towards optimism for the future, even if they are not financially feasible in the long run. The structural relationship through which states act in the interest of corporations is no coincidence. Corporate power structures national development policy in large part because corporations dangle the allocation of investment and resources into a given region as a key ingredient in increasing employment levels and economic growth.

In this way, the globalisation of supply chains has sutured processes of production, distribution, and financialisation together into a planetary system of corridors and megaprojects, while unbundling governance into splintered and financialised forms. As capital has been drawn into large infrastructures, it flows into projects that weaken rather than enhance the possibilities for future collective life: into pipelines for oil exports, skyscraper condominiums, privatised airports, and fracking fields. These fixed, immobile, and large-scale infrastructures, increasingly massive in size as they seek to service runaway consumption and the concomitant extended infrastructure of circulation – are accompanied by ecological devastation and social upheaval at unprecedented scales, distributed unevenly across the globe. Disruption thus becomes felt on the ground through an infrastructural power that logistically disaggregates the sources of responsibility and oversight over a project while assembling investment vehicles that shift the costs of disruptive investments in the future in ways that socialise risks onto society. In this sense, Timothy Mitchell argues, megaprojects 'reflect a contemporary world in which financial infrastructures allow the accumulation of capital to bypass the work of building durable or productive structures for collective life.'[60]

While disruption society authorises constant acts of disruption in the name of technocratic experimentation and innovation, these are not so much 'disruptions' per se – breaking down incumbent barriers – as they are a 'palatable front man' for what is otherwise an imposition of everyday predatory capitalist behaviour.[61] As I have argued here, one crucial way to understand the ontology of disruption is thus through the way disruption governs 'from the middle.' 'Unbundled' by private investors at a distance, disruptive investments are clothed in the language of 'innovation" through which private sector actors distribute their risk by tying public sectors – and the forms of collective life they make possible – into indebtedness and risk even as they insist on the necessity of creative destruction.

Disruption from below: Activist contestations to disruptive infrastructure

What is notable about the rise of disruption is that it has become the keyword of capitalist entrepreneurialism at the very moment at which forms of popular disruption have prominently taken form through the disruption of infrastructure. From anti-racist protests of police brutality that take the form of highway blockades, to water protectors' blockades opposing the construction of oil pipelines, to port occupations in solidarity with Palestine, popular protest in the last decade

[59] Hildyard, *Licensed Larceny*.

[60] Timothy Mitchell, 'Introduction: Life of infrastructure', *Comparative Studies of South Asia, Africa and the Middle East*, 34:3 (2014), p. 437.

[61] Newfield, 'Christensen's disruptive innovation after the Lepore critique'.

has taken creative form through disruptions of critical infrastructure. Recognising the crucial role that the physical circulation of commodities plays for national economies, activists in different sites of struggle have seized the conduits of critical commodities by occupying key bottlenecks in the flows of capital, in order to contest the forms of violent displacement, policing, and surveillance that structure state relationships to infrastructure. Manu Karuka has argued that 'infrastructures of colonialism are infrastructures of policing and military occupation, and have as such been central to the experimental statecraft and social engineering of colonial power.'[62] Accordingly, counter-infrastructural disruptions have become a critical tool to assert collective power in opposition to the state's securitisation and economisation of forms of collective life.

In response to the disruptive power of the state and capital, these 'disruptions from below' are contestations over the form and content of what disruption means, who exercises it, and towards what ends. As many scholars have noted, times of crisis entrench justifications for shock therapy and technical interventions.[63] Yet, as Lauren Berlant reflects, times of crisis are also struggles over the terms of transition for social existence.[64] In times of crisis, 'politics is defined by a collectively held sense that a glitch has appeared in the reproduction of life.'[65] Such glitches provide opportunities for contestation over the terms of transition for the organisation of life. At the same time that 'disruptive' innovators from state actors to businessmen seek to engineer infrastructural experiments at a massive scale, social movements have sought to respond to the glitch of 'infrastructural failure' by disrupting business as usual through the seizure of infrastructural forms. As a response to the disruptions produced from engineered forms of intervention and innovation – what I have termed 'disruption from above' – these antagonisms might be understood as a struggle over the terms through which 'disruption' might be understood, constituting forms of 'disruption from below'.

A rich literature has sought to understand the re-emergence of these forms of disruption in the contemporary era, asking under what conditions activists and workers have used their bodies, barricades, and encampments to blockade capital flows.[66] As some argue, disruptions to commodity circulation and infrastructure development have particular strategic leverage in winning popular demands since, in the current era of capitalist crisis, the sphere of circulation and physical distribution play an intensified role in realising capitalist value.[67] Within this political economic context, infrastructures of circulation central to logistical distribution – ports, highways, railways, and other supply chain conduits – have become key sites for the application of state and capitalist power, and fertile chokepoints for resistance to capitalist dispossession and exploitation.

It is worth noting that these acts of disruption not only articulate resistance to engineered forms of disruption, but that they are also symptomatic of the forms of dispossession and immiseration that 'disruption from above' has produced. Here, we might follow the analysis offered by Joshua Clover, who argues that the blockade's emergence as a central tactic of struggle marks the

[62]Manu Karuka, *Empire's Tracks: Indigenous Nations, Chinese Workers, and the Transcontinental Railroad* (Berkeley, CA: University of California Press, 2019), p. 33.

[63]Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York, NY: Picador, 2008).

[64]Lauren Berlant, 'The Commons: Infrastructures for troubling times', *Environment and Planning D: Society and Space*, 34:3 (2015), pp. 393–419.

[65]Ibid., p. 394.

[66]Cam Scott, 'Below the barricades: On infrastructure, self-determination, and defense', *Viewpoint Magazine* (11 October 2021), available at: {https://viewpointmag.com/2021/10/11/below-the-barricades-on-infrastructure-self-determination-and-defense/Scott 2021}; Jake Alimahomed-Wilson and Immanuel Ness, *Choke Points: Logistics Workers Disrupting the Global Supply Chain* (London, UK: Pluto Press, 2018); Ashley Carse, Jason Cons, and Townsend Middleton, 'Chokepoints', *Limn* Special Issue, available at: {https://limn.it/issues/chokepoints/}; Naomi Klein, *This Changes Everything: Capitalism vs. The Climate* (New York, NY: Simon & Schuster, 2014), pp. 293–336; Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (London, UK and New York, NY: Verso Books, 2013).

[67]Charmaine Chua, 'Logistics', in B. Skeggs, S. Farris, A. Toscano, and S. Bromberg (eds), *The Sage Handbook of Marxism* (London, UK: Sage, 2021), ch. 79; Joshua Clover, *Riot. Strike. Riot: The New Era of Uprisings* (London, UK and New York, UK: Verso Books, 2016).

transformation of working-class resistance into 'circulation struggles'.[68] As Clover traces, we have witnessed a qualitative shift in advanced industrialised countries in the spatial locus of struggle from the strike, centred in a withdrawal of labour in the factory, to the riot, centred on the street. In the late twentieth century, amid the mass transfer of jobs from the industrial sector to the service industry (which today accounts for two-thirds of the US GDP), advanced industrialised state orders have pursued the widespread deregulation of waged labour, coupled with the deterioration of various forms of social protection. Excluded from the workplace, surplus populations who have been increasingly precaritised as an outcome of 'disruption from above' now express their immiseration through interruptions in spaces of circulation, where the blockade and the occupation bring together the class of workers without clear prospects of a secure integration into the waged economy, and whose dispossession occurs in particular along lines of racial subordination. In this way, Clover argues, the riot – one form of 'disruption from below' – acts 'as a modality of race' and an expression of the immiseration of the dispossessed.[69] In locking arms and bodies to the large-scale infrastructure of railyards, highways, and pipelines, activists target 'chokepoints' as materialised expressions of the violence elicited by late capitalism and which they experience as a disruption of their own dreams and futures. 'Disruption from below' thus visibly arrests commodity flows that calls attention to forms of segregation, policing, land theft, and pollution that are produced through the intensified circulation of capital.

Yet, these 'disruptions from below' are not only a 'no': they also prefigure and sustain alternative relations that counter the destructive outcomes of the two prior forms of disruption with a 'yes'. They constitute efforts to construct caretaking and relationship spaces of kinship that we might think of as a different form of 'critical infrastructure'. In opposition to disruptions from above and from the middle, disruption from below seeks to build a different kind of critical infrastructure. In popular disruption from blockades of coal plants in India to port occupations in Sweden, the disruption of critical conduits of commerce share a consistent commitment to expressions of solidarity that envision alternatives to neoliberal capitalism. 'Disruption from below' might thus be understood as forms of resistance that seek to disrupt infrastructures managed or ruled by the forces of state and capital, but importantly, they do so amid and in sync with efforts to demand, envision, and practice alternative infrastructures.

One demonstrative example of these dynamics is in Indigenous-led contestations to oil and energy pipelines. As I have written about elsewhere and can only recount briefly in the scope of this article, the oil and gas projects that cut through Indigenous territory in North America have consistently been normalised by both private and public actors as necessary developments in the name of national economic growth and energy independence; conversely and at the same time, Indigenous resistance has been pitched as a criminal and 'terrorist' threat against the national interest.[70] Tlingit anthropologist Anne Spice argues that centralising the framing of oil and gas as 'critical infrastructure' works to naturalise and depoliticise what are, in fact, infrastructures of invasion and white supremacy.[71] The point of such a move is not simply consolidative, Spice argues; it is to delegitimise the relations 'that sustain Indigenous life in mutual relation'.[72] Such mutual relations of human and other-than-humans on, with, and through the land are assertions of 'Indigenous sovereignty', but also underscore ways in which infrastructure can name a different kind of project; one focused on building a 'critical infrastructure' otherwise.

If disruption from above and middle both produce an anticipatory politics that seeks to secure capitalist futures, I argue that a critical disposition towards these engineered disruptions should

[68]Clover, *Riot. Strike. Riot.*

[69]Ibid., p. 170.

[70]Kai Bosworth and Charmaine Chua, 'The countersovereignty of critical infrastructure security: Settler-state anxiety versus the pipeline blockade', *Antipode*, online first (2021), available at: {https://doi.org/10.1111/anti.12794}.

[71]Anne Spice, 'Fighting invasive infrastructures: Indigenous relations against pipelines', *Environment and Society*, 9:1 (2018), pp. 40–56.

[72]Ibid., p. 41.

seek to struggle over the terms of what disruption can mean by foregrounding practices of disruption from below. Against such alternative visions, the double meaning of 'disruption' reveals that the term is a double-edged sword. While state and capitalist elites seek to appropriate the concept of disruption to normalise upheavals while maintaining the violence of the status quo, activists have sought to employ disruptive tactics to undo the status quo rather than to affirm it. In the process, they seek to affirm something else: forms of mutual aid, relationship and care that prefigure other ways of organising economies oriented around non-capitalist relations to the earth and each other.

In this light, we might understand the age of engineered disruption, following Paolo Virno, as a counterrevolutionary form that is part of a reactive movement to re-entrench capitalist modes of life in the face of popular insurgencies that seek to undo them.[73] To think of disruptive innovation as a counter-revolutionary movement to exert technocratic management from above thus makes way for understanding the critical potential of disruption from below, in popular movements that point beyond and seek to undermine disruptive innovation's investment in neoliberal strategies of flexibilisation and control. Disruption from above and the middle, we might thus argue, are ultimately counterrevolutionary and reactionary forces, which orient themselves towards delegitimising labouring solidarities, Indigenous modes of relationship, and anti-colonial insurgencies, and solidifying colonial and capitalist modes of sovereignty and rule unmoored from them. Disruptions 'from below', on the other hand, assert themselves as forms of disruption, insurgency, and sovereignty explicitly erected to impede the power of state and capital from dispossessing, extracting, innovating, and circulating through the territories, neighbourhoods, and spaces of habitation of ordinary people.

Conclusion

In this article, I have charted three dimensions of disruption: disruption from above, the middle, and below, in order to clarify how engineered disruption functions to forecast techno-optimistic futures and normalise uncertainty from above, while producing material consequences that disintegrate and distribute governance structures and their responsiveness to public and collective needs and demands, producing 'disruption from the middle'. Finally, I argue that looking to activist contestations and resistance to infrastructure projects allows us to centre disruption from below as democratic efforts to construct alternative modes of relationship to disruptive forms of governance and rule. To return to my introduction, then, I argue that disruption's polysemy is 'structurally produced' in the sense that any confusion about what it means and how it is invoked is no coincidence. Rather, the ubiquity and range of its deployment – as an aspirational rhetorical gesture, as a material practice of intervention – is symptomatic of a broader tendency in contemporary capital accumulation to produce financialised interventions as modes of governance that appear to be without an agent (thus appearing to come 'from the middle') but whose effects are nevertheless deeply felt. This polysemic deployment of disruption thus rationalises the upheavals wrought by various neoliberal intrusions while disguising their source.

It may be the case that an age of 'disruptive innovation' seems to project an optimism about a capitalist future through the normalisation of chaos amid the concrete affirmation of the status quo. Efforts to disrupt from above and the middle accumulate capital by bypassing 'the work of building durable or productive structures for collective life'.[74] Such acts of disruption seek to produce the social separateness they require. Yet all over the world, the solidarities and modes of relationship of everyday working and poor people have sought to refuse these technologies of disruption from above and to insist on disruption from below. This means that rather than cede the ground of disruption to its counterrevolutionary forms, we have to struggle over the

[73]Paolo Virno, 'Do you remember counterrevolution?', in Maurizia Boscagli et al., *Radical Thought in Italy: A Potential Politics*, Vol. 7 (Minneapolis, MN: University of Minnesota Press, 1996), pp. 241–58.

[74]Mitchell, 'Introduction: Life of infrastructure'.

meaning of what kinds of disruption become desirable, to whom, and for what. Rather than allow the colonial, capitalist state to seize monopoly over engineered disruption, and what it means and entails for the many, disruption from below must be reclaimed as a site of collective struggle.

Acknowledgements. The author would like to thank Martin Coward, Nisha Shah, Nicole Grove, Louise Amoore, Neel Ahuja, and the participants of the *RIS* Special Forum mini-workshops for the incisive feedback and comments that shaped this article.

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Cite this article: Chua, C. 2023. Disruption from above, the middle and below: Three terrains of governance. *Review of International Studies* **49**, 37–52. https://doi.org/10.1017/S0260210522000432