CONTAGION DESIGN: LABOUR, ECONOMY, HABITS, DATA

Edited by Gay Hawkins and Ned Rossiter

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PART 3:
HABITS OF CONTAGION

INTRODUCING
CONTAGION DESIGN
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GAY HAWKINS &
NED ROSSITER

How is contagion designed? How do labour, migration, economies, habits and data configure contagion? Across a program of four weeks of discussion and debate from October to November 2020, the international symposium *Contagion Design: Labour, Economy, Habits, Data* explored the current conjuncture through these vectors to critically address issues of rising unemployment, restricted movement, increasing governance of populations through data systems and the compulsory redesign of habits. Design logics underscore both biological contagion and political technologies. Contagion is redesigning how labour and migration are differentially governed, experienced and indeed produced. Habits generate modes of exposure and protection from contagion and become a resource for managing biological and social life. Data turns contagion into models that make a virus actionable and calculable. New modes of sociality and collaboration provoke forms of contagious mutuality. But can the logic of pre-emption and prediction ever accommodate and control the contingencies of a virus? The essays in this small book explore these issues and their implications for cultural, social and political research of biotechnological conditions. If contagion never abandons the scene of the present, if it persists as a constitutive force in the production of social life, how might we redesign the viral as the friend we love to hate?

Hardwired into genetic code, design enables viral reproduction as life forms with potential to scale as pandemic events. Amplified and accelerated by the rapaciousness of human species-beings, economies of plunder embrace intentional narratives of accumulation while abrogating histories of violence and destruction. Very different but often complementary registers of design inform economic systems as ideological apparatuses,

industrial modes of production, labour regimes, data architectures, the governance of migration and everyday routines. Planning, modelling and topology are just some of the analytical and methodological techniques and approaches enlisted in drawing attention to relations that intersect, interpenetrate and constitute seemingly contained or exclusive things and conditions. Topological connections also generate or produce disconnections, dissonances, exclusions and conflicts. Such tensions instantiate the political as modes of struggle or negotiation and cooperation inherent to the forging of relations. Just as computational systems strive for interoperability designed to enable processes of capital accumulation, frequently the technical organization of relation is visited by inoperability. Similarly, failure and malfunction, dispute and incommensurability unsettle regimes of truth and assertions of authority.

How might these kinds of background conditions and dynamics inform our analyses of contagion? If the temporality of the conjuncture anticipates a futurity in which new modes of habit coalesce, how can we discern the contours of the present pandemic from the so-called 'new normal' that awaits? Certainly we might assume a decline in morbidity and infection rates, but a pervasive anxiety lingers just as a 'recovery economy' limps along in unevenly distributed ways.

The essays collected in this volume probe how labour and migration, alternative economies, practices of habit and data environments manifest in ways that condition and are affected by pandemic outbreaks. In framing the event and subsequent volume in this way, we were especially interested in what the logic, concept and collective practice of design might mean for how contagion is analyzed and understood. There's an inherent organization and

replicant architecture to biological forms of disease that, at the very least, has revealed the power of contagion to adhere in multiple ways to everyday life.

At a certain level the impulse of design is motivated by an intentionality assumed of the plan. One designs to transform. A futurity is built into the logic of design. A kind of positive hopefulness imbues utopian registers of possible worlds. Yet scanning the ruins of industrial modernity and ravages of settler colonialism, which also include the histories of social-political movements and organized labour, it is all too clear that the imperial ambitions of capital more often than not confront contingencies never figured within blueprints of control.

Taking stock of labour, economy, habits and data at the current conjuncture, we set out to collectively forge a design analysis beyond the pervasive force of a coronavirus run amok, albeit in uneven and variable ways. The question of design enabled us to register how biology, technology, economy, culture and governance at the current conjuncture provide occasion to identify and possibly generate temporalities of life not beholden to modes of futurity predicated on capital accumulation, regimes of measure and the nihilistic drive of indifference toward planetary annihilation.

Part 1 on Migration and Labour asks how renationalization in pandemic times partition labour and migration in ways that contest the national as a triumphant project resilient to a virus that demonstrates its power to destroy economy and life, work and society? Rather than affirming some mythic sense of the nation as a homogenized political space, renationalization instead deepens already existing divisions and borders amplified by structural and technical logics of urban space and platform economies. How do the spatialities wrought

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by the current pandemic, coupled with the persistent continuum of global heating, transform patterns of migration, work and border politics? Further, can contagion be understood as a structuring force over and above attempts by government authorities to organize the economy and society using policy instruments? Following framing comments by Brett Neilson, the three essays by Anne McNevin, Ritayoti Bandyopadhyay and Joyce Liu address these questions by exploring the connections between migration, labour, contagion and biopolitical techniques for designing worlds.

The 'Covid-pause' has created a new context for calling business as usual into question. In this interregnum of an assumed world, contagious mutuality has gone viral – mutual aid practices large and small are being practiced and shared, the role of care-workers in holding everything together is brought to the fore and how to align thinking about post-covid economic recoveries with a longer term response to climate change has become a central question. Essays and opening comments in Part 2, Contagious Mutualities, by Katherine Gibson, Stephen Healy and Declan Kuch, Peter North and Teppo Eskelinen explore what other sort of economies might emerge if we let go of practices and institutions that inhibit 'recovery' for all, human and nonhuman. Scholars and activists investigating new models of production, new forms of mutuality, new roles for the public sector and welfare state and new economic responses to Covid-19 discuss how to rethink and redesign vulnerable economies in ways that anticipate and align with climate emergency, degrowth and new forms of care and wealth redistribution.

Part 3 considers Habits of Contagion. French sociologist Gabriel Tarde was fascinated with the 'suggestive realm', with the power of contagion

and imitation in shaping social life. For Tarde, being open to suggestion was not an indicator of animality or primitiveness, it was evidence of an almost pre-conscious or affective sense of being connected to others. This mode of connection is not based on emotional identification with others; it is more like contagious communication, or a 'group mind'. Following a short framing text by Tony Bennett, essays by Gay Hawkins, Franck Cochoy, Gérald Gaglio and Alexandre Mallard and Ben Dibley explore how biological and social forms of contagion interact. How do suggestion and affective atmospheres shaped by fear of contact, crowds and contamination prompt new habits, how do new devices like facemasks modulate social interactions and how is the governance of populations managed through the prohibition or reform of old habits? What role does suggestibility play in infrastructure redesign focused on the logistics of prevention and safety?

The book closes with `Part 4`, Data Contagion. Computational systems generate data with a viral propensity. Multiplied across platforms, data mutates in recombinatory ways. The mixing of data unsettles order and systems of control. Digital networks provide tools able to measure the spread of contagion across economy, culture and society. But they are less able to register outside forces of politics and history that precondition the speed of distribution and scale of infection. With brief framing remarks by Ned Rossiter, essays by Mark Andrejevic, Rolien Hoyng and Orit Halpern consider the propensity of data to build relations and produce worlds, amplified and accelerated within and across data regimes. What are the protocols of contagion specific to data? How do externalities shape the design of data relations? What is the relation between data and contingency? Can data be asymptomatic?

Taken as a whole, the essays gathered here critically interrogate the interaction between contagion and design. Not beholden to the security of models or assurances of positivistic correlationism targeting post-pandemic recovery and the resumption of business as usual, this book instead asserts the need to attend with care to non-compliant ways of knowing and living in a world compounded by the rule of systemic violence. When contagion is the new normal, and contingency is clawed into the everyday as routines, what does this mean for the security of reason? How, in other words, do we account for the inexplicability of entropic systems that refuse the logic of control and containment? Such conceptual, analytical and indeed political work is a collective endeavour. These essays are our contribution to that effort.

MIGRATION AND LABOUR

SECTION INTRODUCTION:
BEYOND RENATIONALIZATION

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BRETT NEILSON

It seems almost a given of life and experience in the year since March 2020 that Covid-19 has confined people to national spaces. Border closures and travel restrictions were among the first reactions to the spread of Coronavirus and they remain in place in many parts of the world, often with no plan, timeline or clear criteria for their removal. Although the virus itself spread through global routes of trade, travel and commerce, its arrival spelt a crisis and reorganization of mobility. In the initial months of the pandemic, this reorganization took the form of a jolt. Flights were grounded, container ships were stuck at sea, people fled cities and supply chains were blocked. Lockdowns suddenly withdrew labour from workplaces, leading to an economic downturn that belied the notion that finance alone drives capitalism's urge to accumulation. As time went on, a gradual adjustment began to meet demands for economic restabilization. The designation by governments of certain industries as essential contributed to get things flowing again, if only at the price of exposing workers in certain sectors to infection. Containers began to move through ports, office employees learned the niceties of Zoom etiquette, gig workers delivered food to urbanites in comfortable lockdown, platform economies and e-commerce thrived. However, border closures and travel restrictions remained in place, making them one of the most consistent features of governmental responses to the pandemic. Although exceptions were made, for instance to fly farm workers from Eastern Europe to the UK, most people around the world were restricted to national spaces. It is easy to see why the concept of renationalization is one frequently applied to political and everyday experience in the time of Covid-19.

Critical scholars forged the concept of renationalization in the 1990s to explain the disjunctive dynamics of globalization. These thinkers sought to understand, for instance, how countries could denationalize by opening to flows of goods and capital but renationalize by instituting restrictive migration policies. In this view, renationalization was part of globalization and always unevenly balanced by opposing forces. More recently, usage of the term has attempted to invert this perspective. Already before the pandemic, commentators were deploying the notion to explain phenomena such as the China-US trade wars or the blocking of international borders to migrants in Europe's Schengen zone. Although it described empirical processes that were reshaping the world, renationalization, in this optic, became almost an ideological concept. Protagonists used the notion to position these changes as evidence of an onset of deglobalization, reducing geopolitical tensions to rivalries of statecraft and even positing a desirable reversal of transnationalism sustained by supposed elites and a return to essential and meaningful anchors of national identity. The pandemic seemed to confirm this narrative as the global circulation of people and things became a conduit of disease, and governments, rightly or wrongly, deemed border closures necessary public health measures. With people neatly closed in national spaces, it appeared that renationalization had finally overwhelmed denationalizing processes, and globalization could rightly be identified as a historical blip, the fantasy of fossil-fuel hungry intellectuals and business people who emerged from the 1990s with a mission to celebrate travel, openness and hybridity as indisputable goods.

Is the picture so simple? Analysis must place renationalization and the border closures

associated with it in wider perspective. For a start, the hardening of international borders has not stopped irregular migration. Refugees, asylum seekers and other irregular migrants have continued to challenge borders, which, after all, remained largely closed to them before the pandemic. The absence of safe transit routes has pushed many to make journeys more perilous than they would have otherwise undertaken, risking infection and straying beyond zones of rescue or humanitarian assistance. Furthermore, international border closures have not softened the crisis of mobility within individual nation-states. The attempts of internal migrant workers in India to return to their hometowns and villages illustrates this situation. With the sudden announcement of a national lockdown in March 2020, hundreds of thousands of these people attempted to travel home on foot, many of them dying from exhaustion or facing exclusion upon arrival due to their fellow villagers' fear of infection. Predicaments such as this highlight the fact that border hardening in the pandemic has pertained not only to international borders but also to multiple internal borders. Renationalization, in other words, implies not only the control of international borders but also the division of nations from within.

In some cases, the pandemic has brought formal border closures within nation-states. Consider the case of Australia's internal states and territories, which have repeatedly closed their borders to populations from elsewhere in the country. In this instance, state and territory governments have exercised statutory and legal powers that were less evident before the pandemic. Even where internal borders have not been subject to formal closure, however, there

has been a multiplication and hardening of social boundaries. As the Oxfam report *The Inequality Virus* documents, 'the virus has exposed, fed off and increased existing inequalities of wealth, gender and race'. The situation is much more profound than that registered by the trite observation that populist politics has turned countries such as the US and the UK into divided nations. Covid-19 has exacerbated the sexualization, racialization and economization of social boundaries and inequalities that the neoliberal turn of capitalism has entrenched in recent decades. Renationalization, in this perspective, not only hives nations off from each other but also explodes them from within.

Nationalists, then, beware renationalization! If you bought into the narrative that globalization was eroding the nation from without, something worse could be growing in the very bosom where you thought you could take refuge. To observe that renationalization might fracture nations as much as heal them is not to claim that the state form inherited from modernity cannot ride out the crisis, as it has ridden out many before. If hallowed constitutionalisms survive the pandemic, it is not only because they embody a logic of immunization, which, as European philosophers argue, aims to protect life. It is also because their founders built them as self-sustaining systems only by staring in wilful ignorance at the differentiation, fragmentation and unevenness of the political and legal systems that comprised colonialism. A scenario in which the making of states accompanies the splintering of nations is no novelty to historians of colonialism. This temporal resonance is one reason why the archives of colonial resistance offer such a rich resource for minds and bodies that seek to outlive the anxieties of pandemic renationalization.

ON TEMPORAL CONTAGION
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ANNE MCNEVIN

Covid-19 has heightened attention to contagion as a spatial phenomenon. Government responses to Covid have reinforced the notion of contagion as the deadly transmission of disease across bodies, species and states. Covid revealed, on one hand, the fantasy of sovereign bodies that could draw a line around themselves, safe on one side, risky on the other, as if both sides were not already part of a permeable whole. Yet Covid also precipitated a reassertion of national sovereignty, almost as a default reaction: when in doubt, close the borders – at least those we have and can. In many cases and as others have observed, border closures ran against the advice of health authorities, including the World Health Organization, concerned that such measures were of little use, and possibly counter-productive, once the virus had already spread amongst a given population. Border controls nevertheless serve performative functions, creating the impression of defence against purportedly foreign sources of threat and distracting from conditions that make certain groups more and less exposed to risk.

In the case of Covid, risk of exposure and risk of death varies significantly depending on factors such as housing density, digital connectivity, co-morbidities, the extent to which one has access to infrastructures of care or whether one works in the formal and informal industries providing care to others. These factors intersect with each other and along lines of race, class, gender and citizenship. Taking these factors into account, the problem at stake might be conceived less in terms of contagion from the outside-in, and more in terms of the way our bodies and social infrastructures are equipped (or not) to respond to forms of exposure and exchange that are necessarily part of our interconnected and mobile lives. This would mean focusing on the differential distribution

of vulnerability to premature death, that is, on cuts of difference that do not map neatly on to one side or the other of sovereign borderlines.

The impulse to focus on national borders in response to Covid is not so surprising given the way borders feature in epidemiology itself. As Angela Mitropoulos notes, 'the taxonomy of epidemics and pandemics defines populations along national lines': a pandemic is a pandemic only because national borders are crossed. In epidemiological terms, contagion jumps scale by virtue of borders rather than numbers alone. Precisely because jumps in scale register alarm and trigger alarmist responses, epidemiologists hesitated before announcing that the spread of Covid had become a pandemic. In a very real sense, the problem at stake *was* a matter of borders, in terms of both diagnosis and response. Methodological nationalism is written into the science as much as the politics through which the virus is mediated.

The slippage between the biomedical and the geopolitical is also nothing new. The state has long been figured in terms of the body, or body-politic, with corporeal health a metaphor for state robustness or fragility. Disease has long been associated with the spectre of geopolitical outsiders, giving shape to notions of racial, cultural, religious and ideological differences as infectious qualities attributed to aliens, immigrants and fifth columns. Think of the language of 'hotspots' used to describe, at once, a convergence of migrants seeking entry to Europe and an urban or regional outbreak of Covid. In these cases, contagion-as-metaphor serves to reinforce a notion of threat from the outside-in, of pollution endangering purity, as if the parties across these divides were distinct and self-evident with no pre-existing relations shaping the terms of their encounter.

Covid has revealed the relative absence of alternative registers through which to envisage contagion and respond to its deadlier manifestations in ways that do not exacerbate the vulnerabilities of those most at risk. Indeed, Covid has been used as a pretext for the violent enforcement of borders against those very populations. This was the case for example in March 2020, when the United States Government effectively suspended asylum in the name of public health with the introduction of Title 42. This Center for Disease Control and Prevention order enabled the summary expulsion of those on United States territory without authorization in advance of access to legal procedures for seeking asylum. In the months between March and September 2020 some two hundred thousand people were deported in this way, under conditions that increased their risk of exposure to the virus and therefore the likely spread of the virus to wider populations, increasing the pressure, in turn, on the health infrastructures of regions to which the deportees were expelled. In 2021, wealthy states attempted to monopolize the supply of vaccines and prioritize their own populations, despite repeated warnings from health authorities, including the World Health Organization, that 'vaccine nationalism' would exacerbate the pandemic, inhibiting efforts to bring the virus under control with the least loss of life and to minimize the economic fallout, including in wealthy states.

This kneejerk and frequently cynical fallback onto national borders as a line of defence is possible at least partly because we lack widely resonant ways of thinking about exposure to the other as a fundamental part of biological and political life that exhibits life *sustaining* qualities as much as life threatening ones. One helpful line of inquiry in this respect comes from medical anthropologists such

as David Napier and Miriam Ticktin who emphasize that viruses, in particular, might best be conceived as forms of information exchange, the results of which (life threatening, sustaining or other permutations) depend on all sorts of social and environmental conditions shaping reception to the exchange in highly uneven ways. From this perspective, contagion takes place not as the result of an outside-in invasive move, but because immune systems *seek out* that which is different in order to prepare and adapt for a future of further exchange and exposure. While I cannot pretend to fully grasp the science behind these conceptualizations, I am interested in their potential to inspire new kinds of thinking at the intersection of the biomedical and the geopolitical. How might a notion of contagion, envisaged as exchange under diverse conditions rather than invasive force, help to illustrate the limitations of sovereign defence in response to Covid's differential impacts within and across the states concerned? How might it also help us to imagine more effective and more equitable responses, attuned to the social conditions through which viruses, amongst other forms of exchange, become deadly?

Even more ambitious thought experiments might also be engaged. What other geopolitical worlds might be designed, for instance, from the perspective of a different conception of contagion? And what might be gained in such an endeavour by thinking contagion not only in terms of exchanges in space, but also in time? Posing this question, I am less concerned with the fact that contagion has a history. Rather, I am thinking about what is exchanged across time and whether it is any more feasible to separate out the past from the present and future than it is to insist on the impermeability of bodies, species and states. If a different conception of

contagion can unsettle assumptions about sovereign spaces, what of sovereign times? What would it mean to consider temporal containers – past, present and future – usually thought of as separate and sequential, in ways that emphasize their non-sovereign interpenetration? How might doing so, in turn, shift our thinking on the spatial contours assumed to form the basis of geopolitical reality?

That hard lines around space and time could only be drawn in ways that engendered self-defeating forms of division was the starting point for certain anti-colonial thinkers and practitioners of the mid twentieth century. Their designs for anti-colonial polities that exceeded the sovereign state model were in many ways premised on what might be thought of as temporal contagion: the irreversible co-implication of past, present and future. Some of their proposals, circulating prior to the formalization of Francophone postcolonial states, are examined by Gary Wilder in his book, *Freedom Time* (2015). Aimé Césaire, for example, envisioned his native Martinique as an autonomous region in a reconstituted French federal republic, encompassing France and several of its former colonies. Césaire and others grappled with the potential for imperial forms of rule to transmit and mutate across time and space, despite events (independence) and borders (of newly formed states) that might formalize sovereignty in law. Federal models resisted the reification of colony and metropole as separate forms whose imperial ties vanished at the postcolonial moment. Rather, they were premised on a kind of exchange that preceded and exceeded the event of independence and from which neither party could simply move on.

This was by no means an even or neutral exchange – indeed, that was the whole point. Precisely because of the ongoing impact of colonial violence

on the colonized and the enduring accrual of benefit to colonizing powers, the struggle for a future that might somehow be different necessitated forms of exchange in the present that were not wholly severed from the past. To remake the world in the form of clean breaks and sharp borderlines would create a false sense of sovereignty and actively undermine more robust forms of self-determination. There were no guarantees; but by joining colony and metropole in a new kind of polity, federations might conceivably have enabled forms of redress for historical injustice and forms of accountability for what was yet to come, as part of collective projects of juridico-political reinvention. Contagion in time – indelible but not determining – might have been the basis for a reconstituted form of contagion in space.

A similar kind of proposition is arguably at stake in the claims of migrants moving from former colonies to former centres of empire. 'We are here because you were there', wrote Ambalavaner Sivanandan in the 1980s, a phrase that continues to resonate with Afro-Caribbeans in Britain, the Sans Papiers in France and those on the move across the Mediterranean from North Africa to Europe. Their transit in the present is indelibly linked to direct colonial rule, the effects of which persist in the reasons people have to be on the move and the reasons states give to repel them.

Similar claims are made in the context of the US-Mexico border: 'we didn't cross the border, the border crossed us'. The phrase recalls the nineteenth century annexation of Northern Mexico by the United States that produced forms of alienage, and later criminality, amongst those whose racialized difference marked them as outsiders to what we now know as Texas, and to what they knew as home. The phrase also speaks to the long

history of United States intervention into central American states, producing and enabling conditions from which so many have been forced to flee, often towards a northern economy ready to put them to work, precisely because criminalized aliens are cheaper to employ and easier to exploit. Far from even or neutral, these violent exchanges produce forms of interpenetration across time and space. Conceived in this multivalent way, the kinds of strategies that one might pursue against outside-in invaders – blockage, defeat, reversal – no longer make much sense, despite and indeed because of the need to address the profoundly uneven experience and implications of the exchange.

The claims at stake in these phrases politicize the externalization of migrants by insisting on their constitutive presence in the times and spaces in and through which the polities in question have formed and been made to prosper. Such claims draw those times and spaces into the terms of a yet-to-be-forged future. In doing so, they refuse the spatial metaphor of outside-in invasion, as well as the temporal cut between past and present that counts the arrival of migrants today as the start of the relevant exchange.

The point here is not to suggest that single-line slogans or anti-colonial federations offer solutions or templates for today's border politics. Nor is the point to minimize the forms of violence and dispossession at stake in what might yet best be conceived as imperial forms of invasion. The point is rather to question whether and how the spatial and temporal relations evinced by certain anti-colonial and migrant projects might unsettle geopolitics today: its spectacles and fantasies of sovereignty, the violence of border policing and options for repair. How might the notion of temporal contagion prompt

us to imagine a reconfiguration of what are already deeply entangled relations across and within state borders in ways that are less self-defeating precisely because they are more attuned to what produces uneven vulnerabilities?

EXODUS AND DEMOCRACY IN INDIA AT THE TIME OF NATIONAL LOCKDOWN

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RITAJYOTI BANDYOPADHYAY

India began to feel the shiver of the pandemic in late winter, 2020. On 24 March 2020, Prime Minister Modi declared a 21-day nationwide lockdown, crippling the mobility of the world's second-largest national population of 1.3 billion to prevent the spread of the pandemic in the country. Various state governments extended the lockdown in their territories to 1 May 2020, and on 14 April 2020 the central government stretched the nationwide lockdown until 3 May 2020, with some concessions after 20 April 2020 for the areas where the onslaught of the contagion was observed to be minimal. As the end of the second phase of the national lockdown approached, the central government decided to extend the lockdown by a couple of more weeks until 17 May 2020. During the third phase of the lockdown, all the districts were zoned into three categories based on the trend and the spread of the virus (green, red and orange) with relaxations granted accordingly. Again, on 17 May 2020, the National Disaster Management Authority announced a further lockdown until 31 May 2020.

On 30 May 2020, an announcement was made towards a staggered lifting of the lockdown except for those territories declared as 'containment zones', where the lockdown was supposed to continue until 30 June 2020. Services began to resume in a phased manner starting from 8 June, called 'Unlock 1.0'. This was followed by 'Unlock 2.0' between 1 and 31 July 2020, 'Unlock 3.0' in August 2020, 'Unlock 4.0' and 'Unlock 5.0' throughout September and October 2020. The month of November formally ended the unlock process which was termed as 'Unlock 6.0'.

The whole period between March and November 2020 witnessed a severe fall in the

standard of living of the working class, a sizeable section of which was constituted by the internal migrants. As production and services shrunk in the cities and the industrial centres, the internal migrants lost employment. The entire period of lockdown witnessed an exodus of internal migrants and 'agricultural refugees' from various urban centres to their villages. In this essay, I wish to understand this exodus that took place during the national lockdown.

In what follows, this essay presents some of the early findings of my collaboration with political journalist Rajan Pandey and activist Shreya Ghosh on exodus and democracy at the time of the pandemic. In this collaboration, we critically probe a set of questions that the lockdown forced us to consider: Why were people desperately going back to their villages? How can we think of the migrant workers as political subjects? What steps could possibly be taken to make the government more responsive to the migrant question and expand the horizon of the migrants' political rights as citizens? What kind of connection would we build between the future of work and the future of rights in the post-Covid-19 world? In this essay, I proceed with these questions concerning the exodus, the future of work and the future of rights in the context of the Covid-19 induced lockdown. History is replete with instances of circular and return migration. However, a one-time migration or exodus from urban centres at this rate is perhaps a matter that requires analysis. The Marxists tell us the story of primitive accumulation of capital in which peasants desert villages in groups and migrate to the cities. This reverse-migration provides enough fodder to initiate a fresh discussion on primitive accumulation in the context of Covid-19.

The Exodus

The first two decades of the new century witnessed the growing integration of India's small scale, home-based and informal manufacturing activities with global supply chains of commodities. The boom in the logistics sector, construction sector and supply chain revolution happened simultaneously, through an over-exploitation of the 'transit labour' comprised of multitudes of unsettled migrant bodies, whom sociologist Jan Breman calls the 'wage hunter-gatherers'. The Census of 2011 estimated that internal migration increased by 45 percent within a decade. The declining status of agriculture and the need for cash force them to explore better-paying jobs elsewhere.

Despite the repeated promise of providing free rations and other relief measures, these were the people who started returning to villages. Why? The Public Distribution System (PDS) does not cover these people in cities, so hopes of receiving free rations do not apply to them. Take the example of Delhi. An estimate in Delhi maintains that out of around a 19 million population in Delhi, about 70 percent lives in slums or slum-like localities. Out of this, approximately 7 million are covered under PDS, which leaves more than 5 million out of the PDS net, of which around 3 million are considered extremely vulnerable. The rules for getting a ration card require an individual to produce a 'proof' of residence, which is difficult for a section of migrants to acquire as they rent facilities in illegally erected squatter colonies. No doubt, those who have a home even in a squatter colony, and have access to PDS, are in a better condition than people without these fundamental conditions for social reproduction.

A survey of migrant workers in Delhi during the lockdown found that 90 percent of a 15,000 sample had already lost their only source of income, while 42 percent did not have food rations for a single day. Another survey of 11,000 workers claimed that 96 percent did not receive food rations from the governments and 89 percent were not paid by their employers during the lockdown.

The urban, migrant members of informal economy we are talking about leave PDS and voting rights back home in villages, along with the safety cover that comes with PDS and voting rights. In a forthcoming essay Rajan Pandey and I argue that it is primarily because of this reason that they were so desperate to go back in search of subsistence when employment opportunities vanished in cities, where they lacked this kind of safety cover. Furthermore, it is also in this zone alone – the native place – where their voice matters to ensure participation in the local political community through voting rights, which justifies their decision to return. If we must think of migrants' voice and choice in pull-centres, we must call for a major electoral reform in India.

Some anecdotal instances collected by my interlocutor Rajan Pandey will substantiate our argument. In Uttar Pradesh, the polls for the local self-government are scheduled to be held soon. This has already put election aspirants in a competitive and active mode, trying to win the goodwill of their voters. When many workers returned to their villages from cities, the state government mandated them to be quarantined and directed the Panchayats to do the same. Due to a lack of clear directives, timely disbursal of necessary resources and general attitude of leniency, many sitting village heads did not prepare essential arrangements. Thus, while the quarantine centres in villages of Uttar Pradesh were

set up mostly in government schools that were lying vacant, provisions of food, proper electric lighting, toilets, etc., were not made.

However, once the workers staying there and their families started making repeated complaints, aspirants for the upcoming elections began turning up at these centres, and some even started making arrangements for the workers through their resources, seeking to earn their support. The moment this happened, the sitting local body heads swung into action and ensured that necessary arrangements like food, lighting, cleaning and so forth, were made. This shows that although the workers had to face neglect in the workplace and cities, they could bargain and ensure a preferential treatment in the village where they had membership in the political community. These workers were nobodies in other places, but once they reached their villages, they transformed into citizens, worthy of dignity and possessing the power to bargain with the government agencies. The lockdown might have hit the cities first. However, as time progressed, remittance lines began to shrink, causing hunger and distress at home. Many emptied their bank accounts, kept these funds physically attached to their bodies, and began endless walks. The exodus made it clear that cities lacked the institutions and social policies to absorb sudden economic shocks. The cities, for instance, lacked any policy comparable to say MGNREGA. The ad hoc arrangements that various civic and state governments came up with during lockdown severely lacked an understanding of the nature of urban poverty. Public Distribution System does not cover these people in cities, so hopes of receiving free rations do not apply to them. A survey of migrant workers in Delhi during the lockdown found that 90 percent of a 15,000 sample

had already lost their only source of income, while 42 percent did not have food rations for a single day. Another survey of 11,000 workers claimed that 96 percent did not receive food rations from the governments and 89 percent were not paid by their employers during the lockdown. There is nothing for you here in the city. You must leave. There is nobody to protect you. The lockdown unfolded as a crisis in trust of public power.

In a recent report on this exodus titled 'Citizens and the Sovereign: Stories from the Largest Human Exodus in Contemporary Indian History', the activists of the Migrant Workers Solidarity Network (MWSN) collated testimonies from those who walked from the host states to home states if home even meant anything to several of them. That was how we got to know the incredible story of Murshidabad's Moinul. While crossing border between Jharkhand and West Bengal in Jhargram, the West Bengal Police caught the group and sent them back to a quarantine centre in Jharkhand. At the quarantine centre, meals of extremely poor quality were served twice a day. Most people at the centre remained hungry: 'Seeing this dire situation, Moinul and some workers started an *anshan*, or hunger strike, at the quarantine centre. They demanded decent food and the right to go back home. The protest resonated with people who had been holed in there for a longer duration and all of them supported the demands. The *anshan* went on for ten days with everyone's support at the quarantine centre before the District Magistrate and the police intervened. The police relented and arranged for buses to send back all the people demanding to go home'.

After returning to the villages, many migrants faced social resistance. There were instances when they spent fifteen days in orchards near the

villages. Back home, they continued to face hunger as agriculture and MGNREGA failed to absorb them. In many cases, they began to return to cities within a month or so. Some were re-absorbed, but, for many, the return did not mean that they would go back to their old employment at the same wage rate. From the labour market point of view, the dislocation appeared to be deeper.

A Concern of Democracy

The MWSN Report reveals the whole problematic of the migrants' sudden visibility in the political sphere. They have been visible as a major economic agent for a long time. It may be argued that India's much-touted 'growth story' in the last three decades can be attributed to the newer kinds of internal circular migration. They are visible particularly in the logistical economy, covering activities such as road, rail, bridge and speedway construction, waste processing, creating the necessary infrastructure of the digital economy, port, delivery of goods and services, etc., plus activities in such massive but dispersed sectors like small and artisanal mining. However, their visibility in the economic sphere did not result in the migrant's visibility in the political sphere. When they began to desert the cities and took to the roads, they turned this regime of visibility and invisibility upside down. Every return is a new turn. They turned and did something and not merely returned. What were they turning from and turning towards?

In a recent essay in *The Wire* titled 'Postal Ballot Voting Rights: The Only Way Migrant Workers Can Make Their Presence Felt', Shreya Ghosh and I advanced the agenda of substantive enfranchisement of migrant workers through remote

voting, which could be the ground for legislating and implementing a framework, integrating the issues of workplace and citizenship rights. Data from several elections in the last couple of decades reveal that many of the migrant workers were the missing voters, as they could not make their journeys back home at the time of elections or be present during list compilation. Thus, they remain uncounted with their political right practically disenfranchised.

Despite being numerically strong and internally networked through family, caste and local/regional level connections, the migrant workers crucially lack bargaining power, as they have not yet enrolled themselves as a political community or constituency in the competitive electoral politics. In this respect, their trajectory differs from the oppressed caste communities who could make their presence felt at the ballot box.

The migrant workers are also difficult to organize within the collapse of conventional trade unions because of the diversity of employment contexts, spatial dispersion and a high degree of mobility. Often, they inhabit workplaces that substantially differ from the more confined spatial organization of factories and offices. Also, in many cases, due to their economic insecurity and the lack of social footings at the host-state as low-paid migrants, there are many social barriers for them to get organized even when they work in a factory.

The lockdown brought to the fore their overarching identity as 'migrants', over and above other contextual identities of occupation and kinship. During the lockdown, this identity has repeatedly asserted itself through spontaneous mass-gatherings in major urban transit hubs. Remote voting for migrant workers will further consolidate this identity and enable newer organizing in the realm of trade unions

to imagine new generalities, consistent with the contemporary realities of migration and work.

One of the arguments repeatedly articulated is that anyone, including the migrant workers, can always register as a voter in their host constituencies. The rules for constituency change in India are as follows: one can only be enrolled for voting in her place of residence, and not in a place where she is currently residing. A person cannot claim to remain a voter in her native place just because she owns a house there. In short, the individual's inalienable right to vote is conditioned by a rather strict residency qualification. Thus, our system is biased toward the comparatively sedentary population. Therefore, it tends to disenfranchise the migrant and peripatetic populations. This system is not commensurate with the mobility of the migrant workers, and hence, it calls for serious reform. Moreover, an *en masse* constituency switch might lead to ethnic anxieties in the host states, making it almost impossible in practical terms.

In India, internal migration of the working class has historically been a 'state subject'. The introduction of the postal ballot will drive competitive electoral politics of the migrants' 'homeland' to these peri-urban construction sites, which in turn, will make the sender states more responsive to their needs, keeping in mind the electoral arithmetic. The migrants' question can then be also understood through citizenship and not just from the perspective of livelihood. The horizon of political subjectivity of the migrant workers cannot be solely captured through the lens of either only workplace rights, or just voting rights. The concern here can be read in the other way round, not of migrants, but as a concern of democracy.

Re-claiming the City

State welfare, which should have been the most natural response to fight a pandemic, took a back seat, as the Indian state sought to fight the pandemic through a reinvigorated centralization of power, coercive prohibition and policing. In this endeavour, the colonial era 'Epidemic Act, 1897' and the United Progressive Alliance era (2004–2014) 'Disaster Management Act, 2005' (DMA) proved useful. The reactivation of these regulations resulted in a serious infringement in people's constitutional right to mobility and popular dissent via public gatherings. The streets and public squares were declared to be the prime conduits for the spread of the pandemic. As the DMA began to rule the country, the street became an empty space without its social, political and economic operations.

The DMA empowered authorities to clamp down heavily on normal political activity – one that we had witnessed in Indian cities during the anti-Citizenship Amendment Act protests between late 2019 and early 2020. During the protests, Delhi's Shaheen Bagh neighbourhood became the epicentre of a 100-day long spell of intense cultural and political dissent. The sit-in protest by hundreds of local Muslim women and children became a site of international solidarity. A day before the national lockdown was proclaimed – on 24 March 2020 – the city police forced the protestors to vacate the site, citing violation of social distancing norms. Within a couple of days, the Shaheen Bagh neighbourhood, Zakir Nagar and the areas adjacent to the Jamia Millia Islamia University were completely sanitized. The walls in these neighbourhoods carrying graffiti and posters were thoroughly whitewashed and

thus spaces of democratic dissent in public spaces were reappropriated by an authoritarian state. The lockdown thus facilitated the bureaucratic and authoritarian takeover of the country. Within a few days, the existing labour laws were amended, preparing grounds for enhanced capitalist exploitation. The country's economy was further liberalized to make room for an additional 25 percent Foreign Direct Investment in crucial sectors such as defence.

None of these decisions were greeted with popular dissent on the street, as the street was taken over by state forces. The street's suspension means the dissolution of a public political culture that thrives on gatherings, crowd formations, graffiti, barricades, traffic suspension, territorial battles, theatrical performances and speeches. Since the time of the French Revolution, the street had acted as the prime site for the appearance of political publics and a channel of protest. This connection grew more rooted in the mid-20th century, as popular sovereignty became the primary recognizable form of polity throughout the world. The street became one of the key mediators between the people and the authorities.

The lockdown threatened this well-established political culture and became the occasion for the disappearance of public gatherings and protests against the passage of the contentious Citizenship Amendment Act (CAA), the 'whitewashing' of the public walls that hosted political graffiti, the arrest of several students and activists who were literally 'on the street' during the anti-Citizenship Amendment Act campaign and the destruction of a hard-earned set of progressive legislations that offered some protection to the working class. Social distancing, or the fight against

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Covid-19, came to present itself as a 'prose of counter-insurgency'. The loss of the street means the loss of access to the usual tactics of protest: blockades, dharnas and demonstrations. The pandemic empowered the centralized bureaucracy to take crucial public policy decisions without a massive popular backlash on the street.

Nonetheless, protests surfaced in various cities over the access to rations, wages and safe passage home. The police found it difficult to contain the crowds as the usual crowd control techniques proved too dangerous from a public health standpoint. Beating up and dispersing the crowd involved the cops in close contact with alien bodies, breaking social distancing protocols. Shelling teargas meant that the crowd would start collectively sneezing, which would inevitably spread the disease. Taking the protestors into police custody meant a further concentration of bodies in already crowded prisons. The pandemic occasioned emergence of the migrant question as a question of society. It was only by the conscious act to exit *en masse* from the host cities that the migrants could make themselves visible in public discourse.

As the state's failure became evident with the aggravation of the migrant crisis, society itself began to respond. Hundreds and thousands of groups surfaced in the cities and along the highways to organize relief camps and *dhabas* on the roadside. Mobile groups began shuttling across various pathways to ensure food and water supply. *Gurdwaras* in Punjab, Haryana and Himachal Pradesh organized *langars* and transported rations to containment zones. Dozens of doctors and nurses served distressed migrants even outside their duty hours and outside institutional spaces of care. College students and teachers ran helplines and mediated between the

government functionaries and the stranded workers to organize transport. In transit centres, volunteers set up camps and served food and medicine. The guilt-driven middle class liberally donated money to these organizations. Trade unions, NGOs, religious and civil society organizations performed many roles that the state apparatuses and mainstream political parties were expected to perform at the time of the exodus. Suddenly, the pandemic and the exodus activated society. These stories of cooperation and support flooded the news and social media platforms. Various activist groups produced unique literature and surveys on the exodus as they learned from mutual interactions.

These narratives of cooperation constituted the documented part of social cooperation that emerged during the pandemic. As the state declared a hollow war on every conceivable adversary, ranging from the virus to its liberal critics, the society began to reorganize itself through dialogue, care and cooperation. But there were other kinds of cooperation and mutual care that we witnessed in slums, neighbourhoods, containment zones and streets. These were initiated, organized, executed and performed by the humans in *actual* distress. Only through a massive oral history initiative can one hope to archive a fraction of these initiatives.

# CONTAGIOUS COLONIAL DESIGN: A NEW WAVE OF NATIONALIZATION AND THE LOCAL DIVIDE

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JOYCE C. H. LIU

Cartographic Index
to the Death Zones

The highly contagious Covid-19 in 2020 seems
to conjure a different world map before our eyes.
From the daily changing images and charts
provided by the WHO Covid-19 dashboard, we see
the concentration of the 'death zones' on a global
scale. The unevenly distributed infection affects
areas across all borders, with 108 million confirmed
cases in 218 countries and a death toll of around
2.40 million by mid-February 2021. It is no longer a
North-South divide, but rather a local divide. With
the vulnerability hotspots, the pandemic map can be
taken as visual and spatial markers, a cartographic
index, leading us to witness a contagious design
that indexes the residues of colonialism. I want
to call it a *contagious colonial design*, as I would
argue in this essay.

It seems that there is no engineering
mechanism or logistical supply chains that guide
the contagion path on the map's surface. The
Coronavirus knows no borders. It penetrates all
corners in every country it affects. But, if we look
closer at the topographical space and the sharpened
fault lines of each community beneath the surface,
we could detect a pattern of local divide.

'Exacerbation' appears as a keyword on
the daily news. It points to the intensification of
the Coronavirus infection and prospect of death,
cutting across the internal fault lines of metropolitan
cities. Social space is always underscored by
lines of conflict, amplified further by ethnic and
economic distribution and the (un)intentional urban
design of segregation. These tensions surfaced
and were exacerbated whenever there was an
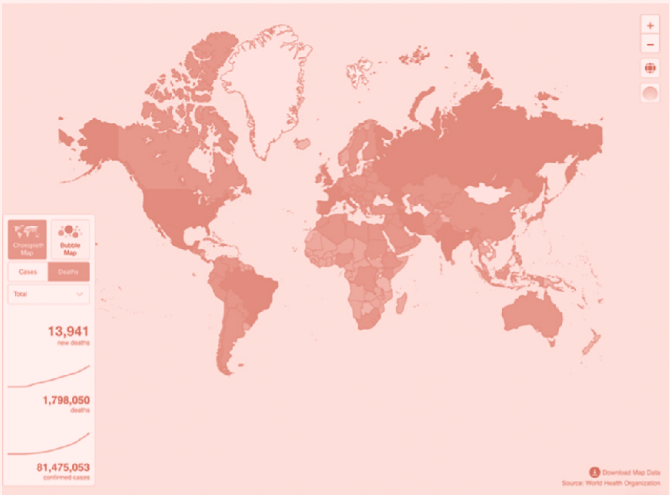
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Fig. 1 WHO Coronavirus Disease (Covid-19) Dashboard.

outbreak of a crisis, such as a pandemic. Increasing unemployment, the failing of the public care system, the militarization of border control and lockdown policy, the escalation of xenophobic antagonism and the aggravation of social conflict all precipitate from these underlying tensions. The re-emergence of the colonial power matrix in different countries reflects the racialized defense mechanism particular to its societies, which has effectively activated local societies' internal lines of enmity.

In this short essay, I highlight a few examples of social tensions exacerbated by Coronavirus in Southeast Asian countries and discuss how the governmental response to the virus exposes a continuum of colonial practice in what are otherwise designated post-colonial states. In doing so, I foreground the new wave of nationalization and the local divide with xeno-racism, in a reversed colonial mentality, that comes with the lockdown. I take these combination of forces, elements and historical legacies as an instance of symptomatic recurrence of the colonial design that tells us more about the post-colonial nation-state's social, economic and political construction.

The Unending Post-Colonial Conditions in Southeast Asia Nation-States

Indonesia and the Politics of Denial

The politics of denial and open lies promulgated by the Indonesian government were brazenly apparent. Until March 2020, Indonesia's government still insisted that the Coronavirus did not exist in Indonesia, even though there were already several local cases reported in January 2020. The health

minister, Terawan Agus Putranto, dismissed it as 'insulting' when Harvard researchers challenged Indonesia as not reporting its cases. Terawan emphasized that people shouldn't fear the virus, and credited the country's lack of infections to Indonesian 'immunity' and 'the strength of prayer'.

On 26 April, the government claimed that the death toll has reached up to 720. However, the Jakarta government confirmed that it had buried more than 1000 bodies in one city due to the Coronavirus. The partial lockdown from late April to May seemed to contain the spread of the virus. But cases surged up again as soon as the ban was lifted in June. By mid-February 2021, the confirmed cases in Indonesia have reached up to 1,233,959, and the death toll is 33,596, the highest records in East and Southeast Asia, not to mention the concealed and uncounted statistics.

The rapid rise of the Coronavirus cases in Indonesia reflects the government's constant practice of a politics of denial, with opaque information about the level of medical knowledge in the health sector, poor management of infrastructure for civic space and a fragile care system. These factors of weak government led to the general public's vulnerability, stripped of all protection. There are numerous cases of entire families dying from the pandemic. According to authoritative studies, the pandemic hurts informal settlements and slums the most. Poor women also suffer much due to gender inequality and segregation in the labour market. Women must carry the burden of unpaid work, such as caregiving. They need to take public transportation because they cannot own their vehicles. They also have fewer opportunities than men to visit hospitals during the pandemic.

The Philippines and the
Strong Man's Martial Law

The Philippines has the second-highest number of death cases in Southeast Asia, with 11,524 deaths and 552,246 confirmed cases of Covid-19 by mid-February 2021. The poor management of infrastructure for civic spaces, especially for the slums, and the fragile care system also is evident in the Philippines.

President Rodrigo Duterte of the Philippines announced a state of calamity and moved the military troops to enforced Martial Law-like lockdown in mid-March. Continuing his practice in the 'War on Drugs', he instructed police to shoot to kill anyone who resisted the government's Coronavirus lockdown. In September, the police had arrested 100,000 people for quarantine violations since March. According to the data from the Joint Task Force COVID Shield, while police have released 89,262 violators, there have also been 34,088 inquests by prosecutors in October 2020.

The practice of Martial Law has a long history in the Philippines. It was first initiated during the Spanish colonial rule in 1871 to control banditry. Later, during the Philippine Revolution of 1896, Governor-General Ramon Blanco declared martial law to suppress the rebels. The enforcement of martial law re-emerged through different political regimes in the Philippines' history, including the American colonial rule and the Japanese Military Administration. In the post-colonial era, Ferdinand Marcos declared martial law on 23 September, 1972, in the name of guarding against the 'communist threat' and continued till 17 January, 1981. Marcos had accumulated immense unexplained wealth during his directorship rule and committed cases of violations of human rights, particularly against

political opponents, student activists, journalists, religious workers, etc. According to reports, there were 35,000 documented tortures, 3,257 extrajudicial killings and 70,000 incarcerations. Duterte's enforcement of Martial Law from 23 May, 2017 to 31 December, 2019 in Mindanao follows suit.

The Cacique Democracy, the tribal king leadership, or the boss rule, as discussed by Benedict Anderson, indicated the tribal leaders as intermediaries between the Spanish rulers and local communities had transformed in the post-colonial political system in which local leaders held warlord-type powers. Duterte's strongman politics and militarized Covid-19 response seems to continue such a colonial tradition. Paradoxically Duterte's popularity among people finds its root in such practices.

Malaysia and the Colonial Sedition Act

By mid-February 2021, the confirmed cases in Malaysia are 272,163 people, and the death toll is 1,005, making for a relatively successful case of containment in Southeast Asia. However, the militarized Movement Control Order and Enhanced Movement Control Order revealed the controversial aspect of pandemic control in Malaysia. Also, a large population in the informal settlements and slums are left behind.

In May and June, there were five significant militarized raids in Kuala Lumpur and Selangor, the two cities with the highest number of confirmed cases, inhabited by the largest number of migrant workers with a concentration of refugee detention centres and slums. These low-waged migrant workers are central to the country's infrastructural construction program. They live in the most impoverished areas in big cities, suffering from precarious and inhuman living conditions. During the

pandemic, 15,000 people had been arrested by 18 March for breaching the Movement Control Order. Since the prisons will soon be over-crowded, the violators were sent to the thirteen detention centres.

During the pandemic, numerous hate speech and discriminatory stigmatization against foreign migrant workers, especially the Rohingya refugees, appeared on various social media.

> 'Troublesome people. Don't make this country where you want to spread the virus!!'

> 'Send them back!'

> 'Well done. Please continue to work like this for the good of our society and country for now and the future'.

> 'Purify Selayang for the sake of the community and the country of Malaysia'.

> 'Clean it all. Good job!'

> 'Congratulations. Make sure Malaysia is free...'.

> 'The Best ... Clean Selangor from foreigners'. 'Shoot the illegal immigrants or kill them yourself'.

> 'Why Rohingya immigrants are not arrested? They are the cause of all problems'.

The documentary made by Al Jazeera, *Locked up in Malaysia's Lockdown* (3 June, 2020), exposed

how the migrant workers, particularly undocumented migrant workers, have been locked up in the most impoverished areas behind barbed wire.

The large-scale militarized raid and lockdown, in an uncanny way, echoed the new village policy during the state of emergency from 1948–1960. During that period, the British colonial government forced half-million ethnic Chinese Malaysian citizens to move into concentration camps in accordance with the anti-communist act. The fear of the unknown threat from the communists in the 1950s now takes its shape in guarding against the migrant workers.

Considering the fact that there are more than 5 million migrant workers in Malaysia, 2 million registered migrant workers and 3.3 million undocumented migrant workers, the drastic militarized actions and the pervasive stigmatization against the migrant workers reflect the discrepancy of the country's attitude toward the massive need for a labour force. The more telling truth is that the Malaysian government used the Sedition Act to interrogate Al Jazeera's reporter, and the interviewee from Bangladesh was deported and forbidden to enter again. While the Sedition Act was initiate by the British colonial government in 1948 during the state of emergency in the Cold War period as a preventive rule against communist activities, now it is used to suppress the journalists' reports, both domestic and international, on the lockdown.

The Topography of Cruelty and the Failing Civic Infrastructure

We must ask, how do we think these policies of militarized preventive lockdown and the neglect of civic infrastructure in certain regions in these post-colonial states of Southeast Asia? To me, these practices serve

Fig. 2   Stills from *Locked Up in Malaysia's Lockdown, 101 East*,
Al Jazeera, 3 July, 2020.

as symptomatic indexes of governmental technologies. When Étienne Balibar discussed 'the topography of cruelty' caused by various kinds of the extreme violence of globalization twenty years ago, he specifically pointed out the global and local 'enmity line' reproduced variously within the boundaries of a single country or city. These seemingly natural catastrophes are overdetermined by social, economic and political structures.

During the pandemic, the topography of cruelty, particularly in Southeast Asia, exposed the exacerbation of fault lines in society that are manifest through the poverty line or the color line with a post-colonial undertone. The governmental responses to Covid-19, the poor civic infrastructure in the slum areas or the new villages at the margins of the urban areas, and the local racialized and xenophobic defense mechanism all demonstrate the persistence of colonial mentality, the recurrence of the colonial past in a new form. The highly contagious but invisible virus triggered the fear and the aggressive-defensive mechanism of people rooted in previous historical experience and found its object as the enemies of society with xeno-racism. The racialized outsiders are the remanent of colonial memories and continued in reversed forms in the post-colonial nation-states in Southeast Asia.

The same reaction also happens in Taiwan when citizens show their aggressive antagonism against migrant workers from Southeast Asia, students from China and even the local-born children with different nationalities, such as 'Xiao Ming 小明'. *Xiao Ming* is the most often used name in elementary textbooks in the narratives of ordinary families. It is also the name for cockroaches, the detestable objects. On various internet platforms

in Taiwan, such as FB, Line, PTT, there emerged groups of netizens ferociously attacking these suspicious outsiders. For example, in one of the largest internet platforms, PTT Gossiping, netizens of different age groups left their messages without inhibition.

For students from China:

'Just drop school and go back to China'.

'Don't come to infect people in Taiwan'.

For *Xiao Ming:*

'Garbage!'

'I'll break his nose if I see him in the streets'.

'Blame your parents who did not choose the right nationality for you'.

'Bloodsuckers for Taiwan's resources!'

'Go back and die in China!'

For migrant workers:

'Shoot them down!'

'They are all dirty and greedy!'

'Look at them. Why runaway? Are they wild animals?!'

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'No physical checkup for
them! There is a huge hole for
the security in our society!'

'Don't touch them yet! These cheap
labourers are still utilizable for us!'

These agitated reactions give rise to new forms of
nationalism, a mode of nationalism that no longer
defines itself as a mythic homogenized cultural and
political space but as a structural platform of a shared
sense of security and economic interests. The forms of
online social media connect the unconscious operation
of the sense of membership of the community. Such
national belongingness, with heightened xenophobia,
is support by the legal ideology of the justified citizen
status and the rightfulness to claim ownership and
protect this society.

Therefore, what comes with the lockdown
is the radicalized line of division and the defense
mechanism, in the name of protecting society. These
preventive lockdown operations, both physically
and ideologically, echo the colonial tactics of
previous centuries and now take various forms:
legitimized militarization, the repression of dissident
voices, the re-enforced enacting the sedition act
and racialized segregation. These processes are
residues of past colonial memories that people
have buried and are now revived. The differentiated
citizenship used to segregate and suppress local
people during the colonial rule later became the
legalized hierarchization against the minority groups
and outsiders through the constitutional citizenship
act. The migrants who were their neighbours in the
precolonial era are now treated as hateful objects.
The continuations and transformations of the colonial

governmental techniques have taught us of the tenaciousness and persistence of institutions and the mentality that upholds them.

The enmity line discussed by Balibar is a thin but susceptible line embedded in people's minds that finds its contagious forms through institutions, law, and even urban spatial segregation. It activates the community's censoring system and resurrects the dormant colonial or xenophobic mentality that detects the 'strangers' that constitute a threat to society, or are merely regarded as a disposable thing. The paradox here is that the mass productive force by alien labour that undergirds the construction of infrastructure within urban settings now turns into the danger, the threat, the anomaly or surplus to be disposed of after consumption. The fear and hostility concur on the biological line that demands and justifies the act of exclusion and elimination. The need to hunt down the internal enemies and cleanse the civic space makes it a new global civil war, an automaton colonial design mechanism.

As I discussed in the opening of this essay, the pandemic map with the vulnerability hotspots indexes the exacerbation of the local divide, linking the malleable enmity line to the restoration of nationalist sentiments in various modes. The spatial divide through urban planning further manifests the colonial unconscious as historic residues in different cities. Different forms of indirect murder against refugees, temporary contract labourers or dispatched labourers are exposed to an extreme. The line of separation is multiplied and reproduced, embodied through acts of militarized raids, racial segregation, neglect of infrastructure for civic space and care system and stigmatization against the others. The colonial contagion design found the utmost expression during the pandemic.

CONTAGIOUS MUTUALITIES

SECTION INTRODUCTION: TOUCHING ECONOMIES
—
KATHERINE GIBSON

We have learned a lot about mechanisms of disease contagion over the last eighteen months. As the pandemic has unfolded, the focus of attention has shifted from an obsession with surfaces and touch, to aerosols and atmospheric dispersion. We have learnt to see our living bodies – with their sticky fingers, shaking hands, embracing arms, receptive cheeks, sniffing noses and air thirsty lungs – as the medium of viral transfer. Both direct touch and indirect air borne encounter are mechanisms of dispersal that produce connections between the virus and new hosts and, as we have seen, these connections have had world-changing effects.

A major concern has been the world-changing effects the virus has had on 'the Economy'. The business community has been particularly vocal about the detrimental effects that virus control measures, like lockdowns and border closures have had on their operations and returns. Governments have, almost overnight, moved into long abandoned policy territory, putting in place emergency economic packages to bolster business and support employees. They have even extended this support to the long-term unemployed and homeless. A tiny virus has instigated economic shifts that radical critics of the status quo have only ever dreamt of.

Of course, as we have seen as the pandemic has unfolded, the temporary nature of many of these changes is a wake-up call to anyone thinking that 'making other worlds possible' is a simple matter. But the unexpected insight into how quickly things could be different is one that both sparks hope and provokes thought.

Members of the Community Economies Collective (www.communityeconomies.org) have long been interested in challenging the capitalocentrism of our economic imaginary – that is, the dominant

view that the only viable and dynamic form of economy is one in which capitalist business, capitalist markets, waged labour, private property and capitalist finance predominate. When this 'Economy' is threatened by a virus or financial collapse or environmental crisis, capitalocentric policy deems that there is no other option than reinstatement. As we have worked to destabilize economic essentialism, to imagine and enact 'other' forms of a diverse, more-than-capitalist, economy, we have pondered how to instigate the necessary shifts that might bring post-capitalist economic practices to the fore. Indeed, we have attempted to deploy our own mechanisms of contagion.

Atmospheric dispersion is a rather hit or miss vehicle of infection, as is producing counter-representations of economy and seeing who connects to them. Yet our strategy of reframing 'the Economy' in terms of economic *practices* has met with some success. In particular, the image of an iceberg, with those practices associated with capitalism occupying only the tip above the waterline, has circulated widely, infecting scholars, activists and especially artists. It seems that, across the globe, there is an appetite for more inclusive visions of an economy in which the vast array of non-capitalist forms of labour, transaction, enterprise, property relations and forms of financing that usually remain invisible under the waterline of the iceberg economy are validated.

Certainly, as the chapters in this section indicate, the Covid-19 pandemic has made visible how much we rely on labour and transactional practices that support lives, but that are not counted or remunerated in formal economic terms. The contagious economy as iceberg image has, it seems, connected with a whole new population of hosts.

But for all the hits that atmospheric dispersion facilitates, there are countless misses. No matter to what lengths some reformist economists go to argue that life must be sustained *before* 'the Economy' can be salvaged, the lobbyists that speak for the tip of the iceberg still monopolize the air waves and the ears of government.

Touch as a mode of contagion evokes the embodied action research projects that have been central to our experiments with making other economies possible. Here we have worked alongside community members/researchers to get a feel for what it means to be excluded from mainstream development and then to experience the embodied shifts that occur when doing a local reframing of the economy together. What can be unleashed is an infectious enthusiasm for starting with what is at hand in order to strengthen existing ethical economic interactions and create new ones. As the essays to follow demonstrate, the pandemic is like a societal scale action research project. The power of mutuality has been revealed in countless transactions, labour practices, investments and forms of communing in response to its forces and impacts. But how can this power be translated into on-going forms of direct life-support after the emergency of the pandemic has passed? The infectious enthusiasm for doing things differently, that has been unleashed by involvement in actual experiments, can only be sustained by more everyday mechanisms that ensure durability – governance protocols, financial planning, accounting frameworks and so on.

What is the medium of viral transfer in the case of making other economies possible? For Covid it is any living body (at the moment we are most concerned with human bodies) that can be opportunistically enrolled as a host. For more-than-capitalist ethical

economic practices it is, as argued above, the sphere of economic discourse and the people who are least cared for by mainstream economics. But is this all? Teppo Eskelinen argues that the ethos of the welfare state is a mentality that may also pay host to these practices, underwriting them perhaps via a Basic Income Payment (as also mentioned by Pete North) or a Basic Living Guarantee as it was reframed in Australia by a group of us early in the pandemic. Stephen Healy and Declan Kuch suggest that design is an arena that may also play host to mutuality, increasing its viability and instituting its durability.

All authors in the essays that follow touch upon an interesting conundrum that the pandemic has unearthed. On one hand Covid-19 has revealed a latent desire for a different world – one where living well means secure housing, less shit work, more income equality, more time in nature, for exercise, for social connection, for family, for making and, most importantly, more respect and care for those whose lives service those of others. On the other hand, Covid has revealed the narrowness and short-sightedness of our economic policies, underpinned as they are by a capitalocentric orthodoxy. To reverse a biblical aphorism, the flesh is willing – indeed the contagion has passed, and we are all infected with the desire for a different world, but the spirit (in this case our intellectual infrastructure) is weak.

MUTUALITY BY DESIGN: DESIGNING FOOD AND MOBILITY FUTURES
–
STEPHEN HEALY &
DECLAN KUCH

Emerging alongside the novel Coronavirus has been the idea that the pandemic is an opportunity for a radical change of course. In the first weeks of the spread of the virus in Europe, Bruno Latour declared that Covid had done the seemingly impossible: stopping the unstoppable globalization machine. Latour proposed a reflective exercise centred on two questions – what is presently stopped that we would like to abandon altogether? And what would we like to see born in its place? Over the past year there have been many efforts to answer these questions. One of the most significant responses is an explosion of global mutual aid projects. Current debates about how to 'build back better' are foregrounding how collective responses to Covid are also an opportunity for tackling longer term existential threats from climate change to the persistent injustices of structural racism. The Covid context suddenly makes social, economic and ecological transitions appear more urgent and more feasible. In this essay we consider how mutuality by design provides both a critical conceptual framework and format for what might emerge.

The 'Covid pause', as it has become known, has created an uncertain viral-temporality embracing everything from the exposure-time required for the infection to spread, to concerns about when current social and economic disruptions will be over. The questions we wish to explore are also temporal. Specifically, how can a mutual response to Covid provide formats for an enduring response to climate and related crises; how can it provoke a different future? And what if mutuality were to spread like a virus? By what design might mutuality become a contagious idea?

Our argument proceeds in two steps. First, we turn to contemporary conversations among

design theorists to understand how mutuality might spread like a virus. This spread involves not so much the design of mutuality than identifying the right ambient conditions for this latent capacity to take hold. Then we explore two examples: food security and mobility, with a focus on how they are already being re-designed by the latent force of mutuality and the provocations of Covid. These examples highlight the role that processes of experimentation, futuring and sharing play in developing mutuality and, more critically, how collaboration and mutual support are often already present, ambient, built into the format of historic institutions, awaiting the right conditions to be re-activated. In conclusion, we revisit how the Covid-pause might become a moment of rupture that makes explicit a capacity for mutuality and marks the beginning of a different trajectory for human and more-than-human communities.

Mutuality by Design

What is meant by design? Design is a process that depends upon the work of creating and trialling, developing feedback loops and processes of reflexivity and recursivity to shape a world that also shapes us. The design theory we draw on emphasizes design not as a form of wholesale invention, but rather an ongoing noticing and redirecting of what design theorists Abby Mellick Lopes and Tony Fry term the patterns structuring common-life. Design's unashamedly interactive and interventionist approach responds to provocations, to problems that emerge and require responses. It involves starting where we are and connecting it to where we want to go.

For Fry, the central task of design is to redirect human communities away from practices that sustain the unsustainable towards what he calls

the development of sustainment. The emergence of sustainment is contingent upon design's capacity to think-in-time. Thinking in time is a process with three temporal horizons. First, there is design's timeliness, particularly in urgent contexts where it helps to find ways forward in (the present) time, a readiness to experiment, fail and try again. Second, design is also about the capacity to speculate about what might be possible, to imagine what could be. Third, design involves working backwards in time from preferred futures to arrive at present conditions of possibility through time. Building on Fry's work, anthropologist Arturo Escobar connects design thinking to diverse cultural-forms of life. Design becomes the basis for an autonomous cultural politics recognising and recuperating embedded but sometimes incoherent, historic patterns of life as the basis for a different future. In each of these formulations design is a distributed, collective capacity whose exercise depends upon widespread engagement and mobilization. Our claim is that all three of these temporalities – timely, speculative and recuperative – are important for thinking through the possibilities for mutuality.

How, then, do design and mutuality interact? Dean Spade, Martia Sitrin and the Sembrar Collective document the worldwide emergence of community-led mutual aid responses to Covid. For Sitrin, these responses are evidence of something that finds timely expression everywhere at once. Mutuality, like the virus, is ubiquitous, awaiting the right conditions to go global. If mutuality is already here, a potentiality awaiting the right time, then noticing it becomes the precondition for its actualization by design. Writing in the context of the Bronx, scholar-activist Lauren Hudson notes the intersection between the Black Lives Matter Movement and the everyday practices

of solidarity organized in and by communities in response to the pandemic. The practices of peer-to-peer reciprocity she documents include the creation of a digital credit system to efficiently distribute food to people too vulnerable to leave their home during lockdown, echoing the Occupy movement's response to super-storm Sandy eight years earlier. From this perspective, mutuality's potential as a design for living rests upon the ability to think-in-time, to engage in a creative process that sees cooperative practices in where we have been, where we are and where we would like to go.

In the next section we use the concept of mutuality by design in Covid times, and in the future, to explore emergent possibilities in food security and mobility. Our reflections are attempts at thinking both in a designerly way and in time, about how collective responses to the pandemic might align with enduring responses to the challenges posed by climate change. We draw on diverse economies scholarship and insights from science and technology studies to identify more than capitalist forms of economic organization, exchange, practices and relationships. We understand these already present patterns as emergent forms of mutuality, as the basis for an alternate trajectory that leads to a different and common future.

Food Security

Patterns of mutuality are latent in food provision, as are the gross inequities of market-based distributive mechanisms which dominate much agricultural production. The UN State of Food Security and Nutrition in the World reports that Covid related disruptions to food systems could increase the total number of undernourished people in the world by

between 83 and 132 million in 2020. During this same period perverse scenes of crops being ploughed into fields and livestock being culled for want of people to harvest and process were common. In Australia, as elsewhere, mutual aid groups developed seemingly overnight to distribute food and other necessities to those in need. How, then, might mutuality intervene and become contagious in this context and how might these interventions provoke a more durable future directly from our present circumstances? Rethinking food security involves both timely thinking about how to reconfigure food systems, as well speculative thinking about how to translate a present course of action into a desired future.

A group of scholars from the Community Economies Research Network from Finland, Australia, India and New Zealand worked together to address this question across disparate contexts. During the lockdowns and early stages of the pandemic each of these countries had mutual-aid responses targeting food insecurity. In each of these locations we began to identify a pattern of agile social enterprises, new technologies, enabling state policy and powerful social movements all implicated in different ways in redesigning food systems in response to need. What these redesigns suggest is the possibility of a more enduring mutuality. According to Gradon Diprose, the newly formed New Zealand Food Network, with support from the state, developed new practices of food redistribution facilitated by purpose built algorithms to reconfigure supply chains. By design its aim was to connect food destined to landfill to distribution outlets and people who need it. Donors took custodial responsibility for food health and safety compliance door to door. This timely design intervention opens new possibilities for food futures. Minimally, this New Zealand example

suggests that timely re-design allows for food system continuity, security and ways of addressing food waste as a vector in tackling climate change. Maximally, a more coordinated, state supported, national approach to surplus food recodes food as a common-access good.

One of our Finnish collaborators, Inka Santala, helped us to identify a similar future-trajectory, thinking in time toward a more distant future and in response to the realities of climate change. Since the economic restructuring of the late 1990s, charity-run food pantries have played a role in distributing food to the long term unemployed in Finland. As in New Zealand, the response to Covid involved expanded forms of cooperative redistribution facilitated by the state, charities and civil organizations, alongside extensive customary practices of gleaning and gathering. Following Latour's suggestion, these Finnish developments imagined a desired food future for 2030 that was both equitable and climate-ready. They focussed on what it would take to arrive at this future and established feasible parameters for speculation, including the continuity of Finland's strong welfare state and its commitment to carbon neutrality by 2030. On the basis of these assumptions, a set of shifts in state policy, finance, subsidy structures and cultural practices that might allow designed-transition on the time scale of half a generation were identified. For our Finnish colleagues, these interventions amount to a normalization of mutuality built on: the de-stigmatization of food aid, changes in regulations around expiry dates to facilitate food redistribution, an ongoing commitment to progressive taxation and the subsidization and support of local and climate friendly agriculture. Not only were these re-designs seen as eminently achievable due to

latent patterns already in play, they could also lay the foundation for a new food future by signalling a shift away from inequality, EU economies of scale agriculture and half-measure responses to new climate realities.

Mobility

This politics of possibility can be seen in other relations between state agencies, infrastructure providers and social groups. The case of mobility shows how recognising patterns of mutuality from the historic past can provide a different starting point for repatterning economies of mutuality by design. We are currently in a moment of profound interruption to the financing models of cities and urban infrastructure. Covid-19 has disrupted assumptions about population growth due to border closures and other reductions in mobility. It has also led to huge increases in people working from home. These are some of the significant changes that have revealed the contingency of seemingly fixed, interlocking sets of calculations around the financing of road infrastructure.

The new Covid-normal patterns will likely see remote working do to both Australia and America's residential geography in the 2020s what the highway did in the 1950s and 60s: spread it out. This will require a rethinking of urban planning, including its financing. Road financing models are the building blocks of worlds. They're integral to the techniques of deal-making that combine standardized template contracts with performative associations. However, they often end up resembling what legal scholar Fleur Johns has termed a 'Dadaist collage' – a far cry from microeconomics textbooks on utility maximization. And also a far cry from the reality

of failed projects being glossed over through associations with places and events that glamourize and bolster the reputations and power of financiers.

Covid shows that there's never been a better time to democratize our cities as the curtain is pulled back on the alchemical charade of financial magicians. Two cases to analyze this transition are the rise of car sharing and the National Roads and Motorists' Association's (NRMA) EV Charging network. Both are undermining the car as the epitome of privatized neoliberal subjectivity, as a commodity that allows owners to assert their individuality and freedom.

Car sharing models, including quasi-rental models such as GoGet, have been shown to decrease car use, in part by making the cost of ownership explicit. In these models, cars are reconfigured as common resources and governed as such. Other aspects of automobility have depended on mutual support since their inception. The NRMA is a case of ambient mutuality. Its history goes back some 90 years as one of Australia's oldest Mutuals. That term has both legal and ethical weight. A mutual is a legal form requiring a return of profits to members, rather than shareholders or other external parties.

The NRMA's mutual form was pivotal to not only supporting drivers but also to lobbying for effective road rules (jaywalking, drink driving, speeding, etc.) and the construction of more and better public road infrastructure. In our view, this form of mutuality, a legacy from another time, offers a starting point for a different future. Unlike shareholder-based corporations such as the Australian multinational Transurban, whose path-dependent rent-seeking behaviours are funding the construction of toll-roads and a much warmer future, mutuality can underwrite a different world to come.

The NRMA is currently building public EV charging infrastructure using significant cash reserves from their Social Dividend Investment Strategy. Our point here is not to redeem a road lobbying organization that's deeply embedded in unsustainable and car-dependent planning systems, but rather to show that this organization also supports diverse practices based on mutuality that challenge highly individualized approaches to automobility.

Designing as a process of 'thinking in time' depends upon being able to identify those breaks in an historic trajectory that are already present. Mutuality names forms of already existing diverse economic practices that can be redirected and enhanced, in the case of our two examples, towards other futures.

Designing Mutual Futures

Covid-19 has powerfully shown how both mutuality and design can reconceptualize the present and future. Ruptures are powerful events in which change becomes possible, a moment to decide what social and economic practices to keep, what to let go of and what we might grow in its place. At the same time, many communities around the world responded to this disruption through practices of mutual aid that seemed to appear everywhere at once spontaneously, seemingly going-global alongside the virus. How might this moment of mutuality become part of an enduring future, part of an enhanced capacity for sharing both in response to the pandemic and the disruptions to follow?

In our view, this involves repositioning design as a cultural process of noticing, pattern recognition and thinking in time in order to generate more durable forms of mutuality. Likewise, the widespread

and ingenious forms of mutuality provoked by Covid are a testament to what is possible when everyone is enrolled in the process of co-making better worlds. At the moment, all of us are caught up in the temporality of the virus itself: latency time, rates of spread, the rise and fall of death rates, the logistical timetable of vaccine dissemination, the uncertainty about whether or even when this will be over, the threat of the next emergency that may prove to be far more disruptive. In contrast, the temporalities of design examined here explore mutuality as a distributed capacity that requires speculative thinking in time. This involves recognizing ambient or latent patterns of mutuality in the present moment, a willingness to speculate on how to arrive at more mutual futures and a capacity to recuperate and reimagine historic forms of mutuality as a basis for a different future.

BREAKING THROUGH TO
SOMETHING BETTER?
A VIEW FROM THE MERSEY
–
PETER NORTH

It is well known that after a shock, the ideas that are picked up are often those lying around that previously did not make sense but do now. At the beginning of the Covid crisis, it seemed to many that the pandemic might act as a pause, a chance to stop and think about what we are doing and if we wanted to change things. It could even, as Arundhati Roy suggested, act as a portal to a new and better situation. Many recognized that we have not been living in the best possible world and that the problems Covid-19 manifested were symptomatic of this. They saw the planet as 'speaking back' and hoped that we would not return to the old normal of unsustainable growth, polluted air, species destruction and looming climate catastrophe. There had to be an alternative to a choice between the unsustainable consumption of the few and the grinding poverty of zero hours employment contracts, supplemented by food banks or unemployment on below subsistence levels of welfare for too many.

A year or more into the pandemic we are perhaps better able to take a more sanguine view about what opportunities we have had to realize significant change and how to actually build back better in practice. We have certainly paused and envisioned alternatives but have we been able to make pre-existing progressive relations, practices and organizations more resilient and widespread? Has mutual aid been contagious? Or, after a shock, does it look like the old is bouncing back, not necessarily better?

There are no 'one size fits all' answers to the profound challenges that Covid-19 has raised. The virus impacted on different places and communities in vastly different ways, so the specifics of place and contingency (geographically and temporally) matter. Some places are better resourced than others.

Some places need help more than others. The local 'political opportunity structure' matters. What follows is a view from one place. I write from the self-styled 'People's Republic of Liverpool', making modest claims while looking out the window onto the same Victorian terraced street for over a year now. My aim is to tell a story about how Liverpool, Merseyside has negotiated the pandemic and to examine how struggles for alternative economies and social relations draw on existing networks and practices in specific places that are both enabling and restrictive.

While at first some countries seemed to deal with the pandemic reasonably well (Taiwan, South Korea and New Zealand/Aotearoa come to mind), in the UK anger grew as a newly elected, inexperienced and libertarian government committed to 'making Brexit happen' was caught on the hop. Years of neoliberalism, austerity and political gridlock meant that the state did not have the capacity, imagination or will to act decisively in response to the threat. This sorry history created an economy in the UK with huge regional disparities and significant economic and racial inequalities. It is also one of the key reasons why the pandemic hit poorer areas and communities – like Liverpool and Merseyside – much harder.

This essay explores how the conditions to break through to something better have not yet manifested in Liverpool. While various forms of mutual aid emerged in response to the crisis, they have not become *contagious* in the sense of being seen as convincing alternatives to what was unsustainable and unequal. Perhaps the question is not so much 'is mutualism contagious' but how could it be encouraged in different places given countervailing forces that are not structural and dominant, but contingent and mutable?

Covid Travels, Lands Locally, Affects and Mutates

Covid-19 hit Merseyside particularly hard. When it arrived in Liverpool it found a hospitable home in overcrowded streets where people had to keep working in unsafe conditions. Years of austerity on top of a deeper, long-term crisis of capitalist restructuring meant too many people lived in overcrowded, cold, damp housing, struggling to pay their bills. Many were unemployed or, if working, stuck on poverty pay and zero hours contracts. If they got Covid symptoms, they often could not afford to self-isolate and had to continue working in situations that put them into contact with many other people. Infection rates and subsequent deaths rocketed. People were angry in a city that, once again, seemed to be ignored by central government, where national problems hit first and harder and which often appeared to be the last place to come out of them. While Liverpool, after very hard times at the end of the last century, had rebranded itself as a visitor destination and seemed to be doing well economically, there were serious concerns that the lockdown would undo all the good work. Were the awful times coming back?

However, things were not entirely bad. Liverpool sees itself as a place with problems but also as an outward-looking city with strong bonds of solidarity and mutual aid. More Scouse than English, things can look different looking out from the banks of the Mersey. There is a history and culture of people looking after each other that exemplifies the ethos of 'you'll never walk alone'. New forms of mutual aid mushroomed spontaneously during the early days of the pandemic as neighbours set up

self-organised WhatsApp groups and looked in on each other at a street-by-street level, made sure they got their medicines and food and that someone knocked on the door of isolated people. There were more volunteers than could be used. Food banks proliferated. Years of investment in social enterprises and voluntary organizations, particularly from EU funds, meant that there were structures ready to co-ordinate self-organized grassroots support to help people through the immediate crisis.

If the first stage was an explosion of grassroots mutual aid, the second stage was triage. The UK government responded to the crisis by locking down the economy three times, asking those who could, to work at home and paying businesses to furlough employees who could not. At the city-region level, funds were provided to help the social economy and voluntary sector infrastructure, built up over many years, to survive the crisis and continue to meet the overwhelming need. At the time of writing (June 2021) there still have not been major job losses as a result, although many are worried about their future.

Crisis/Opportunity?

The immediate response to the pandemic did seem to fit Arundhati Roy's hopes. While some suffered the unspeakable tragedy of losing someone before their time, others had a better lockdown, which provided time to think about and imagine something better. Furlough and lockdown meant millions found more time to spend with their family, enjoy a slower pace of life and spend socially distanced time getting exercise. They enjoyed quieter, less polluted streets, more bird songs, nature bouncing back and cleaner air. Some pointed out that none of this adds to GDP but it does add to quality of life and indicates that we

might not have current priorities right. New, hopeful stories emerged of what could be and people started to talk about 'building back, better'. People asked: how much of the things we are doing more of now, but perhaps did not see or take seriously before, do we value and want to keep? Bruno Latour suggested that now was the time to think about what we are happy to have lost through the pandemic, not in Schumpertarian terms – seeing crisis in a market economy as a welcome forest fire cleaning out the inefficient – but as a way to decide what we want to protect. If some 'bullshit jobs' and boring forms of useless toil disappear, does it matter? Might working fewer hours, perhaps sometimes at home or in a local office space be more convivial?

More concretely, the city-region local authority (which covers all of Merseyside rather than just the City of Liverpool) established a funding stream to support the social economy. This fund included support for existing organizations and for a new social trading venture called Kindred. It also set up a panel investigating alternative uses of land. The local authority strategy promotes an inclusive creative economy, stressing health, equality, wellbeing and happiness. Social value and community-wealth building are also promoted through procurement. The ambition is to be carbon neutral by 2040 and a tidal barrage to generate hydropower from the Mersey are policy visions and energy infrastructures again being promoted. These opportunities for new forms of mutual aid suggest that some new thinking is becoming more influential. They are a welcome counter to strategies that uncritically stress growth as the only way for the city to 'get its mojo back'.

However, despite these initiatives and policies things were more complicated. Just as it once 'took a riot' to shake people out of outdated

ways of thinking, old assumptions about how to
secure economic prosperity still linger in a city
that was, for many, already a case study of how to
build back after a crisis. Specifically, the economic
crisis associated with the economic restructuring
of the 1970s and eighties. The old agenda that
sees Liverpool as a city that will project itself
internationally through culture and sports remains.
A new stadium is planned for Everton Football Club
on the banks of the Mersey. Major investment is
proposed for Liverpool docks that might have a
bright post-Brexit future in a city no longer marooned
on the wrong side of the country. This suggests
that new ideas are not contagious, rather that
local politicians are groping towards, as yet under-
formulated, evolving new agendas in which the old
is mixed with what might be new. Not unsurprisingly,
growth is still an aspiration.

More critical voices associated with an
initiative called 'the human city' promoted other
radical ideas. They suggested a new emphasis on the
development of a solidarity economy, cooperatives
and social traders. Might we pursue community
wealth building and the foundational economy
and stop seeing social enterprises as competitive
organizations delivering services abandoned by
the welfare state? Might social care be taken
back into the public sector? Might we seriously
address climate catastrophe and develop new
understandings of social and ecological welfare
for the Anthropocene rather than growth? Or even
consider radical ideas like a universal basic income
or universal services and degrowth? Might housing
be seen as something for people, not a moneybox?
Should property developers inevitably get their way?
Does the city have the vision, capacity and, crucially,
resources to deliver such a radical agenda?

Contagious Mutuality Stalled

Fifteen months into the pandemic widespread vaccination seems to be making things a little better and retail and hospitality services have reopened. Those who can are still working at home and others are still furloughed. A government that had spent ten years proclaiming the benefits of what it called fiscal responsibility did 'do what it takes', bankrolling businesses to furlough their employees. This, along with lockdown, temporarily set things in aspic. We had our pause and a chance to think anew. But we have not been able to act on many new ideas yet. Rather than the pandemic being a 'portal to a new world' we seem stuck in a holding pattern until the storm passes, unable to go forward or back. When everything eased up, things did not look that different from before.

The ideas and hopes recounted above were not opportunities taken. Some had hoped that Covid might have acted as a 'mobilizing event' providing a portal to a better world. Mobilizing events make people start to think not only that 'this is awful', 'it can't go on like this' and 'something must change', but also that something can be done in a timely way. The pandemic *has* been awful, and many have felt it *has* exposed the many structural problems associated with neoliberalism described above. In contrast with other places, the British government's performance was initially problematic and thousands died as a result – but it was much more successful with vaccine roll out and took a much more cautious approach to opening up the economy, getting kids back into school and the like. The old did not die and there was no convincing alternative to enduring the hard slog of getting through the lockdown and

out the other side. Like Ireland after the Eurozone crisis, Brexit Britain took the medicine like a good patient and its reward might be the 'roaring 2020s', unsustainable though that is.

Cultivating Mutuality Rather Than Expecting Contagiousness

Perhaps the most interesting development is that there seems to be an emerging and potent new anger about the longer-term crisis of austerity and entrenched structural poverty that has exacerbated the effects of the pandemic, both in terms of deaths and wider economic and social damage. Scousers are proud of the way they have rallied round in the crisis, but they were also angry about a situation in which a rich economy accepted poorly paid people working long hours on zero hours contracts and needing foodbanks to get by. A conception of food banks as charities shifted to a solidarity framework focussed on the human right to food, the development of food commons and diverse ways of accessing good, nutritious food. But this shift did not become a generalized call for solidarity economies which focus on people's needs rather than what is profitable, or on how we might recognize our interdependence in the face of climate catastrophe. In Liverpool, we don't (yet) have a developed enough conception of what an alternative should be. Covid did not make alternatives based on solidarity economies and mutual aid seem credible enough to become an organizing principle for society beyond helping people get through hard times.

Perhaps what we are saw in the UK is the result of the dashed hopes of those attracted to Corbynism and who hated the nativism of Brexit, combined with the lack of a well-developed

alternative to the neoliberal 'utopia' of contemporary Britain. Those of us who retain hopes for larger scale change need to continue developing and strengthening those forms of mutual aid and solidarity all around us that we can sometimes undervalue in times of uncertainty. We need to recognize the social and solidarity economy *we have*. We have seen local suburban high streets improve radically as people socialise more locally and travel into city centres less. Working from home is likely to continue. We need to get on with the slower, more patient job of building alternatives. We need to contrast needs-based conceptions of the solidarity economy that develop our interdependence with more neoliberal models of social enterprise that overemphasize heroic social entrepreneurs delivering services once provided by a welfare state.

Building from this, the story from the banks of the Mersey suggests that a diverse economy of mutual aid, cooperation and solidarity economies must be underpinned by a social democracy or a universal basic income/access to universal basic services that enable people to live well. It is from this secure base that diverse alternatives can proliferate – far moreso than mutual aid in a fundamentally unjust and unsustainable system. Living sustainably and well is currently impossible for too many people in neoliberal Brexit Britain, a heartland of the other pandemic, neoliberalization, that spread out from these islands in the 1980s. Mutual aid does not unproblematically proliferate, like a virus. We still have work to do.

REDEFINING COMMUNITY AND THE WELFARE STATE IN THE PANDEMIC
—
TEPPO ESKELINEN

Crises are moments for contestation and reconsideration. The ongoing Covid-19 pandemic has forced reconsideration of both the role of community organizations and government-civil society relations. This is particularly visible in the Nordics where governments are usually seen as having ontological priority and civil society is considered as aligned with the state. However, while the pandemic response appears government-centred, self-organizing civil society has also been a key actor in provoking new social relations.

The welfare state tradition in the Nordics has meant that these countries have coped relatively well with the Covid pandemic, especially in comparison with the rest of Europe. They have generally implemented modest measures that have been widely accepted. In an official European-wide survey carried out in late 2020, Finns were most likely to report that the measures had not created much disturbance in their daily lives. However, despite this comparatively low impact, Covid-19 has still been a major disruption. It has forced a reorganization of many aspects of social life, as well as a reconsideration of social values and practices. By creating uncertainty and shaking the foundations of everyday life, the pandemic has presented an opportunity to rethink what matters. However, while such windows of opportunity have appeared almost everywhere, their implications vary significantly between societal contexts. In the Nordic context, there is a need to understand the institutional constellation and mindset of the welfare state in order to analyze how it operates as a mentality or ethos that allows various kinds of practices based on egalitarian ideas to spread.

In this essay I discuss the societal implications of the pandemic in the Nordic context

from the perspective of a social scientist based in Helsinki, Finland. I begin with a few remarks on the politics of disasters. Then I consider what kinds of opportunities for societal change the pandemic has created. Finally, I analyze the specific relations between government and civil society in the Nordics and argue that the welfare state can be seen as a *mentality* or common framework rather than just an institution. When the welfare state is seen in this way it can become the basis for new ideas and models for civil society that will hopefully spread and become contagious in these unusual times.

Politics in Disasters

The major question many crises provoke is what kinds of social relations will emerge from this situation? For all the talk about 'resilience' and other 're' words like reconstruction and recovery, it is obvious that crises invite speculation about how to move beyond the state of affairs that existed prior to this catastrophe. Politics in crises, then, are not a matter of return or recovery but of transformation. However, in order to realize this political possibility, it is necessary to expand the meanings of concepts like 'resilience' and 'recovery'. Could 'recovery', for instance, include redefining the concepts of work and value? Or the emergence of a sharing culture? Resilience scholars sometimes make the distinction between resilience as 'bouncing back' and resilience as 'moving forward'. So, a moment of crisis needs to be understood as a moment for change and collective learning, rather than stabilization and a swift return to what used to be considered 'normal' or fixed.

However, it would also be misleading to think of social change only being relevant and possible

after the initial shock and response phase, when there is space to 'build back'. While it might seem that when a crisis is unfolding the best and only thing necessary is to respond, often the most important moments for redefining social relations come exactly in this moment of collective disruption rather than after it. So, there is a need to see both in-crisis and post-crisis phases as opening up new political possibilities in different ways.

Moments of crises can also function as laboratories for new social relations. They have been theorized as triggering 'cracks in the patterns of domination'. John Holloway argues that crises and disasters can cause a breakdown of social relations and the sudden emergence of quite different networks between people, relations of support and solidarity. Disasters do not create possibilities because what exists is in ruins but because of the tendency for such situations to create unique kinds of communities, sometimes called 'therapeutic communities'. For Rebecca Solnit these types of community create a 'window to social will and possibilities'.

So, what kinds of new ideas and political spaces emerged during the pandemic and could they form the basis of new social relations and communities? By new political spaces I primarily mean an expansion of the perceived domain of political possibility. While political possibilities are often seen to be severely restricted by various structural reasons, the response to the pandemic tells a different story. For example, the climate movement has long argued that the climate crisis should be treated as an urgent existential matter, requiring a significant reduction in economic activity. This has generally been seen as impossible. But the Covid response shows that when a sense of

urgency exists, economic activity can be reduced. In the field of social policy, some problems have been classified as wicked problems, meaning there is no straightforward remedy even if political will exists. However, amidst the pandemic, many ostensibly wicked problems have turned out to be solvable problems. Consider the example of homelessness, which virtually disappeared in spring 2020 in the EU. Getting homeless people off the streets was considered critical to their safety and the wider community's, so available housing was found.

Another set of political possibilities emerges in the revaluation and reconsideration of existing practices. For instance, most Covid mortalities, especially during the initial spread of the virus, took place in nursing homes for the elderly. Experts on elderly care did not seem surprised: given the fiscal pressures to organize care 'efficiently' and the resulting lack of resources and culture of negligence, a pandemic was bound to generate grave outcomes. While the public was generally aware of this negligence, the pandemic made the situation visible enough to force new debate. In this way, pressure was created to reconsider the current organisation of elderly care, the outcomes of privatization and the tension between efficiency and dignity.

In a somewhat similar manner, the discourse on food shifted from efficiency and cheap food to food sovereignty. The fragility of food systems was revealed in restrictions of movement hindering the ability of agricultural workers to access work sites. While most people were aware of the large migrant labour input into food production, a crisis was needed to shift the discourse from efficiency to food security and labour conditions.

In addition to the expansion of the policy space, there was also a visible community level

response, which reshaped social relations. In contrast to government policy, the community is about human encounters and affective connections. Indeed, the community response to exceptional situations has been analysed as a form of 'affective exceptionality'. Observing the response in Helsinki, where I live, I would categorize the community response as follows. First, we saw various forms of community-building such as affirmations of a sense of 'being-together'. On the most basic level, this refers to the symbolic aspects of community-making: bonds and small practices which acquire symbolic dimensions. These were important not only because of the need to affirm connections but because the idea of 'community' had to be somewhat reinvented with social distancing. In addition to the symbolic aspects, practical acts constantly defined the limits of community membership: who was included and who might have been left out. People who were incapable or afraid to leave their homes were identified and helped. This was not only about strengthening existing social bonds but very much about creating new ones in urban environments. For many people, offering help as the pandemic hit was their first contact with a long-time neighbour.

The pandemic forced communities to extend everyday recognition of membership. There was a need to identify those at risk and to expand understandings of interdependency. Many communities experienced difficult realizations about the need to recognize and react to the vulnerable situations of the homeless, beggars and others. It was a radical learning process for communities to recognize their boundaries and explore how to reach out to and involve those on its margins. This sensitized many people to the plight of the marginalized beyond the pandemic situation.

Second, a large number of new ideas began to spread. A community can act as a kind of echo chamber that amplifies new ideas. In exceptional times, ideas can be surprisingly quick to spread, they can become contagious. In the early phase of the pandemic, many such ideas were related to supporting local businesses, cultural enterprises and freelancers. But some ideas went far beyond this, as broad social policy reforms and visions began to gain momentum beyond the usual frameworks. Examples include the universal basic income, the need for which was demonstrated by the difficulties experienced by workers in precarious labour market situations.

State and Communities

Apart from a relatively generous welfare state, the Nordic context has been traditionally characterized by a formally organized, non-antagonistic and state-aligned civil society. The close connection between the state and civil society has been credited with generating a high level of general trust in the society. The state is also often seen as having ontological priority over civil society, as politics is understood as being chiefly about regulation and redistribution. Given this context, a disruptive situation can reinforce the ontological priority of the government. It is easy and tempting to think of disaster responses as the responsibility of state authorities which can implement restrictions, regulations and coordination at the state level. Indeed, in Finland the government appears to have increased its power over the market, as stimulus measures, capitalization and subsidies have decreased the functional independence of private sector actors. In a similar fashion, sustainable recovery gets seen as simply a matter of directing public investment to sustainable

use, rather than reinventing investment to consider social value and participation.

However, it is equally possible to see the ontological basis of society lying in civil society. Organization, particularly in exceptional times, must begin on the community level and no state politics is functional without broad legitimacy. In the pandemic response, government legislation, let alone recommendations, accounted for very little without the organizing role of civil society and the ability of communities to adjust to rapid changes in everyday practices and moral norms. In this way, the primacy of civil society in social organization was a powerful reminder of the roots of the welfare state. The historical basis of the welfare state lies in cooperatives, a massive voluntary sector, seeing nature as a commons and a broad commitment to decommodification but this has been largely side-lined in government-centred narratives. Discourses about government-civil society relations depend on various hegemonic narratives, the pandemic disrupted these in interesting and important ways.

Welfare State Mentality

My argument is that the welfare state should not be seen simply as a set of regulatory and redistributive institutions but rather as a mentality. This mentality is grounded in underlying ideas related to mutuality and the value of equality. Such a mentality can find various institutionalized forms. Recognizing this mentality is important not only for understanding the mindset in a given political terrain but for understanding possibilities for social change in a broader sense.

One way to analyze the role of such underlying ideas or mentality would be to think of

the spread of ideas as analogous to the spread of a disease. A question that follows is: what kinds of metaphors are appropriate for describing a pandemic? While the most common metaphor for the community spread of a virus is 'wave', many epidemiologists see this as inaccurate. Epidemics don't really spread like waves and the metaphor leads to pointless definitional disputes: 'are we still in the second wave or already in the third wave?' More useful would be to see epidemics through the metaphor of 'wildfires', a virus continues to spread as long as there is inflammable material available. The metaphorical inflammable material being non-immune human beings.

Following this metaphor, social change should not only be seen as needing the spread of new ideas and practices but also the right conditions for these ideas and practices to become contagious. Ideas do not spread simply because of their attractive qualities but because the right cultural conditions have created a preparedness or openness to such ideas. For example, in my study on timebanks a few years ago I found that while timebanking as an idea and a practice easily spread, its institutionalization as a practice was premised on a high level of mutual trust typical of fairly egalitarian societies *and* also a high level of digital literacy as a critical enabling factor in their organization and expansion.

The welfare state, then, can be understood as an underlying mentality rather than simply a form of organization. This mentality includes a recognition of the need for mutuality, solidarities and equality. It enables new ideas aligned with these values to spread and provides a context which gives rise to these ideas and makes them timely and relevant for answering acute and unexpected challenges.

Contagious Solidarity

The pandemic has severely disrupted our lives and its impacts are yet to be seen. I have argued that the way out of the pandemic should not be a recovery but a transformation, a collective learning process. Exceptional times open new political spaces and new social relations. This is not restricted to possibilities for new policies but also the remaking of some of the fundamental relations which constitute society.

Different societal contexts also generate somewhat different responses. I have briefly looked at the Nordic welfare state context. The Nordics are characterized by a civil society very much aligned with governance. This has led to the welfare state being perceived as an ideal form of government. However, the welfare state should also be seen as a mentality which can potentially materialize in diverse institutions and practices beyond the state. Indeed, the collective learning process in the context of the pandemic could lead to embedding welfare state values within a huge range of new practices. If the welfare state is just seen as a set of institutions, the outcome of the pandemic appears to be an empowered state. But when it is seen as a mentality, the pandemic is revealed as creating the conditions for the spread of new ideas and practices which expand the possibilities of the welfare state.

While this argument is quite specific to the Nordics, similar mentalities exist in different forms in any society and can be understood as creating the conditions for the spread of progressive ideas in exceptional times. Future crises are to come and in these crises a mentality of equality and other

shared bases of the welfare state will be highly valuable. Practices based on solidarity do not spread automatically. We should be aware of the conditions in which they can become contagious and explore how to support and extend these conditions.

> The discussion here is partially based on my co-edited book, *Enacting Community Economies Within a Welfare State* (Mayfly Books, 2020).

PART 3

HABITS OF CONTAGION

SECTION INTRODUCTION:
GOVERNING HABITS
—
TONY BENNETT

The topic of habit has been on contemporary intellectual and political agendas for quite some time. Think of the revival of academic interest prompted by Deleuze's positive revaluation of habit in *Difference and Repetition,* and the interfaces between this and related developments such as the renewed interest in Dewey's work on habit. This scholarship has generated important new questions concerning the governance of habits relating to everything from climate change to waste management, crowd control and more. While these are all issues that raise broader questions concerning the nature of corporate and state power, they also include concerns centred on everyday habits.

This is not news to the authors of the essays in this section, who have all been engaged with questions of habit prior to Covid-19's entry on the world stage: Franck Cochoy, Gérald Gaglio and Alexandre Mallard in their extensive research on consumer habits and shopping routines; and Ben Dibley and Gay Hawkins in the context of a major research project, also involving myself and Greg Noble, with the somewhat prescient title of *Assembling and Governing Habits*. What we are witnessing with Covid is historically unprecedented in the repertoires that are being developed to disassemble and reassemble everyday habits in order to make them governable in new ways.

We have also witnessed habits become a topic of everyday discussion in new ways. One of the things we decided to do in the *Assembling and Governing Habits* project, once it was clear that the virus was here to stay, was to survey the contemporary media, social media and a range of academic journals to ascertain how and where questions about habits were being registered. This work demonstrated the multiple registers in

which habits were being placed on the frontline in the struggle against the virus. New handwashing practices; the closure of venues (pubs, mosques, churches, sports grounds) posing the threat of crowds and contagion; social distancing; the social isolation of the afflicted via quarantine measures; homeworking; the lockdown of cities, nations or localized hotspots; new shopping practices; the curbing of most forms of travel: in all of these ways, habits have been placed on the line, often becoming the point at issue in a tug-of-war between competing philosophies. How far could, or should, states interfere with the freedom of its citizens in order to stem the rate of infection?

Whichever political options were implemented, people everywhere have been both beseeched and cajoled into the need to attend to and change their everyday habits. But not equally and to the same degree: the policing of habits has fallen unevenly across the divisions of raced, classed and gendered populations. And clearly there are habits in which our relations with the more-than-human are also at issue: our relations with the virus, with the marketing of various forms of wildlife in China's 'wet markets' and with an environment that benefitted from reduced rates of human economic activity that the Covid-19 crisis brought in its wake. Changes in habits also significantly altered infrastructures and urban atmospheres evident in the circulation of emptiness: the eerie stillness of city streets, motorways and beaches deserted of crowds.

These are among the issues that the following essays address, but from a particular angle – that suggested by the perspective of contagion. Another characteristic of the burgeoning literature engaging with the Covid crisis has been the revival

of attention that has been paid to earlier theoretical models. There has been, as Franck Cochoy, Gérald Gaglio and Alexandre Mallard indicate, a good deal written about what Foucault had to say about the role of the plague in inaugurating modern forms of governmentality. And – not for the first time as Gay Hawkins and Ben Dibley reveal – a return to Tarde, and his accounts of suggestibility and imitation, which are remarkably useful for understanding the interactions between viral and social contagion and the emergence of a group mind.

HABITS OF SOCIAL DISTANCING: PROXIMITY AND SUGGESTIBILITY

—

GAY HAWKINS

Lockdown, *quarantine*, *social distancing* – the lexicon of Covid-19. Each term alludes to a distinct array of regulations and conducts, a biopolitical dance with a virus. Social distancing is the focus here. But what exactly is it? Is it a uniquely Covid social grammar based on increased vigilance to 'proxemics' or the unconscious regulation of personal space? Is it a new habit in which the threat of contagion is made calculable and governable? Is it an emerging element in urban circulation in which the ghostly presence of a novel pathogen is animated?

Obviously, it is all of the above and social distancing forces us to think about how these various elements: proxemics, habits and urban circulation, interact in ways that affect the routines and experiences of everyday life, as well as the constitution of individual and collective psyches. The most immediate impact is a *spatial* expression of biosociality or the constitution of the social in complex negotiation with what Dipesh Chakrabarty has called the 'virosphere', a vast realm of micro-organisms that dwarfs every other group on earth. New infrastructures such as barrier technologies and masks, the modulation of human movements and interactions, evident in strange public choreographies such as people standing 1.5 metres apart or diverging on approach, are all evidence of attempts to live with and manage the risk of contagion. They foreground how new manifestations of space and distance have become central to making a Covid world.

This essay investigates social distancing as a form of human and technical infrastructure that regulates circulation through the provocation of new habits. It also considers how social distancing is implicated in what nineteenth century French
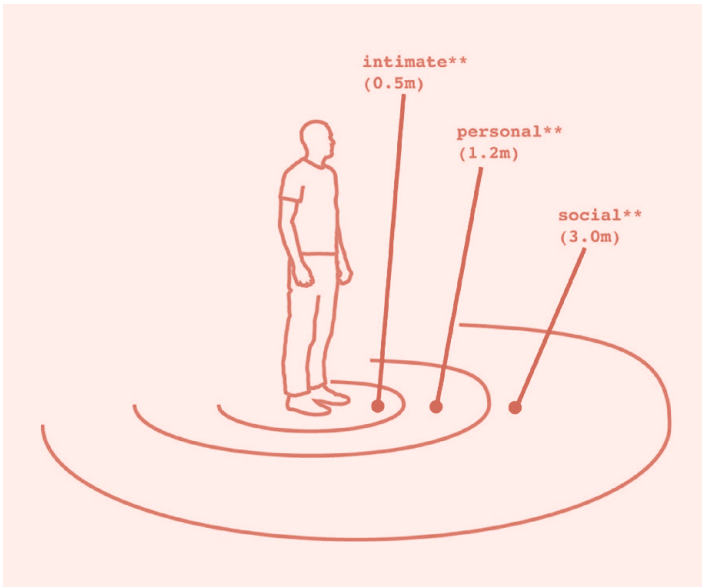
Fig. 3   Image from www.neurosciencestuff.tumblr.com indicating
proxemics or the calculations of personal space necessary to
reducing anxiety.

sociologist, Gabriel Tarde, has described as the 'suggestive realm': a form of almost preconscious social awareness predicated on the affective force of suggestibility. Tarde's idea of the suggestive realm resonates with debates about contagious mutuality. It alludes to the inventive composition of new social ontologies characterized by the micropolitics of awareness and cooperation with other humans, with the habits of pathogenic micro-organisms and with urban space. Creating distance is not so much about individual security and separation but intimacy and collaboration. It is a way of becoming together with others, with a virus, and with finitude that is fundamentally collective and predicated on ongoing negotiation. Thinking of social distancing in this way is very different from discourses on Covid that revolve around struggle, war and the ultimate human or pharmaceutical conquest of the virus with a vaccine. In contrast to mastery or conquest, distancing involves forms of diplomacy and negotiation that make it a critical mechanism for governing life under Covid.

To pursue these two issues: social distancing as a new habit and human infrastructure, and social distancing as characterized by the dynamics of suggestibility, cooperation and negotiation, I'm going to turn to that important but under-explored concept: *action at a distance*. Action at a distance was central to Tarde's mode of social analysis and has been elaborated in distinct ways by both Foucault and Latour. It offers unique insights into how various forms of social order and organization are realized across spaces, both vast and small. For each of these thinkers, 'distance' – which is not separation so much as relation – yields important insights into how to assess the politics and effects of social distancing.
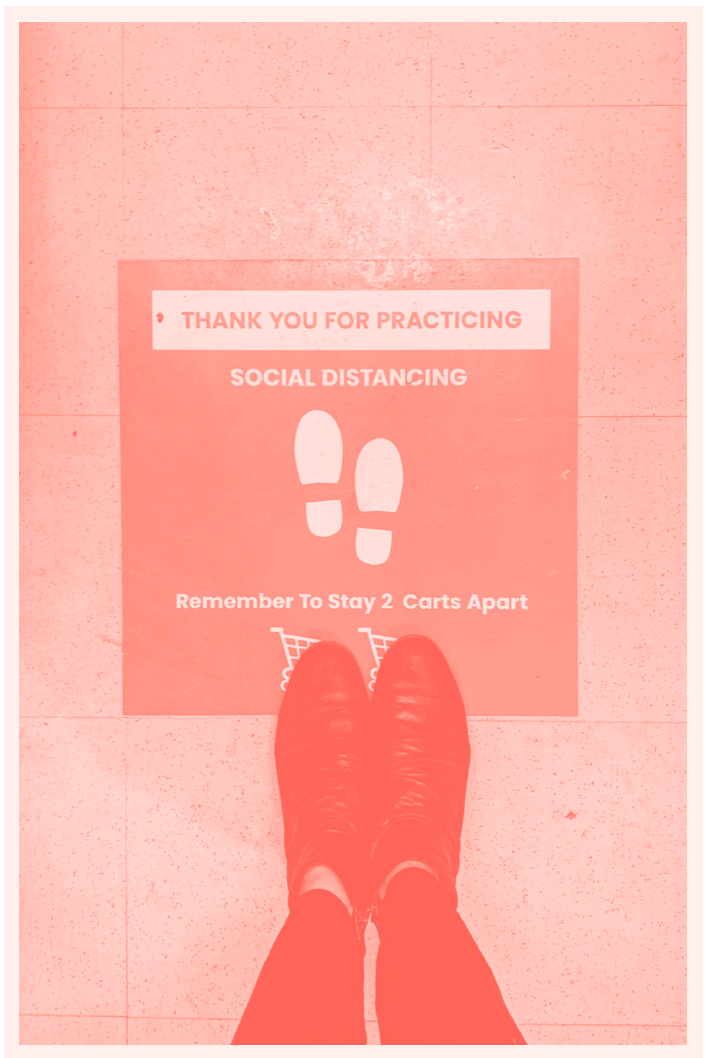
Fig. 4   Social distancing signage outside supermarket.

Habits, Humans and Infrastructures

The idea social distancing as infrastructural, as a way of managing urban circulation and security, is evident in its objective of reconfiguring mundane patterns of navigation in cities. There is nothing new here. This process is going on all the time in the design of urban space and in the use of surveillance and calculative technologies that manage people flows and transit spaces to maximize movement and ensure 'optimum capacity'. Central to these urban design strategies is a focus on how to assess and manipulate habits of movement that are often beneath consciousness or unthought, which is to say nonconscious. Habit, in these governing calculations, is usually represented as a problematic action or 'behaviour' that is intractable in its recalcitrance and unthinking repetition. However, it is also often simultaneously seen as a potential site for manipulation and redesign, a mechanism for nudging new actions, for governing conducts to achieve particular ends. Habits are not something to necessarily control but to modulate and govern *through* or *with*.

Social distancing is a crude addition to this complex repertoire of urban design logics. The yellow cross on the ground indicating where people should stand in public is hardly as sophisticated as the surveillance infrastructure and environmental cues shaping 'herd movement' in underground rail systems or shopping malls. However, it has the same effect, in the sense of interrupting an unthinking habit of movement and reconfiguring the relation between people, actions and space in order to provoke new practices. Regulated social distance is the outcome of this yellow cross but 'action at a distance' is the governing technique that realizes it. The cross is

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an indirect disciplinary mechanism designed to encourage self-regulation or the normative gaze through new calculations of proxemics and security. It is a mark designed to disrupt one habit and encourage another.

For Foucault and Latour, action at a distance is generally used to explain how forms of rule and order are carried out from afar or distributed across networks. Action at a distance describes how technologies of governing – from statistics, to expertise, to the inculcation of particular habits – are operationalized across spaces and boundaries in ways that link centres of calculation to areas or populations that are to be dominated. 'Distance' in these governing processes is a space of movement and exchange that facilitates control, that allows things to circulate in ways that sustain both direct and indirect mechanisms of rule. Governing at a distance (Foucault's elaboration) and action at a distance (Latour's elaboration) are fundamentally interconnected. For both these thinkers, distancing involves techniques of calculation and translation. It produces spaces where persons, organizations and entities that are differentiated by often immaterial boundaries are brought into shifting and indeterminate alignment.

In the current demands for social distancing, governing at a distance is in play. Scientific expertise about how far microbes spread when talking or coughing, for example, is made public in order to encourage people to recalculate personal space and their habits of movement. The cross on the ground translates this information into new spatial relations. The enactment of social distancing habits implicates humans in the infrastructures of Covid as critical elements. They become part of a distributed network of regulations, practices and devices that

don't simply change the environmental conditions or milieu of cities but also realize the objective of security. Social distancing involves calculations by individuals who are *both* objects of surveillance, knowledge and data for governing at a distance and also critical infrastructural agents in the ongoing production of space that is qualified as 'Covid safe'. What we see here is the alignment of governing imperatives with myriad mundane devices and habits in order to both generate new norms and manage populations. Disciplinary power and biopower managing uncertainty in distinct but compatible ways. And, as Foucault has noted in his account of biopower, it is this correlation between populations, probability and uncertain futures that is central to general economies of security.

The Suggestive Realm

What's missing, however, in this analysis of social distancing as a mode of governing at a distance is close attention to the phenomenological registers of *distancing* as a distinct mode of relationality and circulation. There is little analysis of the minute daily actions and mundane manoeuvres whereby forms of intimate, interactive separation are created.

This more phenomenological and ontological register of distance as intimate relation brings us to Gabriel Tarde. Tarde's unique form of sociology was focussed on collective dynamics and the inter-cerebral dynamics of social interaction. He has been celebrated as the definitive sociologist of relations. Unlike his contemporary, Émile Durkheim, Tarde was not interested in transcendent or structural guarantors of order; he was fascinated with the infinitesimal psychological interactions that constituted social reality. In contrast to social

structures there was immanence and the autonomous and co-operative power of social forces. For Tarde, 'action at a distance' was the most basic or elementary social fact: social action occurs through imitation and innovation. Action at a distance is a form of relation that brings difference in all its forms (human and the non-human) into communication.

In Tarde's schema, suggestibility, imitation and mimesis are real forces influencing how people behave. Being open to suggestion is not an indicator of animality or primitiveness, it is evidence of how a sense of self is developed through awareness of other selves, through an almost pre-conscious or affective sense of being connected to others. This mode of connection is not based on emotional identification or identity. It is more like a form of *contagious communication*, or 'group mind'. It also signals the profound shift from thinking about 'society' as a demarcated realm out there, to 'the social' as an ongoing process of enactment. Tarde's thinking is creative and significant. As evident in the recent flurry of engagement with him in science and technology studies, process philosophy and accounts of vitalism. His analysis feels very contemporary in its focus on the relations between the social, vital forces and materials. And, in relation to the rise of social distancing, Tarde helps us understand two significant elements of the nexus between communication, contagion and the social.

First, Tarde shows how social distancing can be understood as a habit that emerges in *distributed relations between people and numerous other elements including pathogenic organisms.* If the elementary social fact in Tarde's system of thinking is relations of modification and communication or actions that emerge through a sense of association or 'contagion', then the idea of subjectivity has

to be redesigned. In this schema action doesn't come from a subject who is reformed, it is not the outcome of individual behaviour shaped by rational reflection; rather, it emerges in imitative and inventive dynamics in which affect and suggestibility play key roles. We can see that Covid has unleashed a suggestive realm characterized by affects such as insecurity, contamination and fear. These affects and communications emerge in association – they're not everywhere all the time – and they prompt adaptive and inventive choreographies and interactions like those weird imitative dances of parting or separating when you encounter another person walking towards you on a narrow path. Or pre-emptive negotiations between the habits of the virus and habits of the human in the unease or discomfort you feel when you automatically go to touch your face or that surface of potential transmission, but sense that you shouldn't.

Suggestion and imitation offer very different ways to think about the relationship between affect, governance and regulation. In these examples of contagious communication, habit is not recalcitrant or locked in bodies; it is emergent and distributed across numerous elements and associations. It is a kind of bodily unconscious that is mediated and configured by the suggestive realm rather than a normative gaze. Contagion is an anticipatory sensation, a non-conscious perception rather than conscious deliberation.

Secondly, social distancing and the force of the suggestive realm draw attention to the role of negotiation and invention in living with non-human others, especially dangerous pathogens. It foregrounds the dynamics of *social cooperation with difference*. Social distancing creates a space of security or a milieu, as Foucault terms it, that

allows for uncertain elements, natural and artificial, human and non-human, to be accommodated by establishing how to act in relation to each other. It is a pragmatic structure that allows for both causality and circulation.

This framing of social distancing is inherently political. It's not macro-political or big 'P' political, it's not driven by large scale transcendent categories like power or nations or antagonism or opposition. It's micro-political. The focus is on emergence and feedback. If micro-politics is about how difference is negotiated, then social distancing can be seen as a process whereby the difference of a new and catastrophic virus is *cooperated with.* The active force of the virus is a powerful player in this collective process, it's not just something to be mastered or controlled but a difference that is configured and animated in relation to a heterogenous ensemble of other elements: from masks to government regulations and edicts, to marks on footpaths.

Thinking of the politics of social distancing in this way, as a mode of cooperation, does not dismiss the macro-political issues but it does suggest that when you want to shift from the minor dynamics of action at a distance, habits and the suggestive realm to the bigger picture, maybe it is more effective to bypass geopolitics, global rankings of infection rates and when a vaccine will save us, and just head straight to the planetary level.

Dipesh Chakrabarty sees the virus as part of the great acceleration, evidence of the impacts of the exponential increase of humans on the planet, and yet another episode in the deep history of the evolution of life. What the destruction of the planet has done is allow pathogenic micro-organisms to flourish and force humans to constantly improve and upgrade their technologies in response to

pathogens' exceptional skills in evolving, adapting and reinventing. Thinking at the planetary scale, and in terms of planetary health, is very different from approaching the politics of Covid-19 at a global geopolitical scale which, as I've argued, seem trapped in the logics of mastery and domination and the magic bullet of a vaccine.

The small negotiations with pathogens, evident in social distancing habits and the force of suggestibility in reshaping mundane actions, point to a different response and raise the question: how could this micro-level of cooperation, inventiveness and careful negotiation be enacted for the planet? What kind of spaces and worlds do we need to create for pathogens that allow them to keep their distance rather than exponentially flourish? What does social distancing indicate about the parameters of planetary rather than just human health?

If we accept that habits are more than human and are distributed across mind/body/environment assemblages, then the gestural dynamics of social distancing show how these three elements: minds, bodies and environments are engaged in a collective, collaborative and creative constitution of a Covid world. The interactions between these elements are not about contestation, or war with the virus – erecting borders and effective separation – but rather involve inherent cooperation with it. This technique of action at a distance is about sympathetic and adaptive negotiation with others *and* with a new form of life that is realized and enacted in spatial habits. Social distancing isn't a behavioural response to risk, to a new and threatening environment, it is a practical action that makes a contagious situation real and establishes forms of local order within it.

ON THE ART OF BURYING ONE'S HEAD IN A BAND: HOW THE FACEMASK ENCOUNTERS THE HABITS OF LAYPERSONS AND EXPERTS

—

FRANCK COCHOY, GÉRALD GAGLIO & ALEXANDRE MALLARD

In recent months Covid-19 and then, with it – or rather against it – facemasks, have disrupted mundane social encounters. Confronted with a little known, unpredictable and potentially fatal virus against which there was no available vaccine, authorities had no choice but to reach for various social prophylaxes. Many governments promoted social distancing in public space or lockdowns in domestic space or both. Distancing soon became fraught with uncertainty, as evidenced by the rapid emergence of controversy over the ability of the virus to spread through the air in the form of short-range droplets or more diffuse aerosols. Lockdown policies have proven to be effective but terribly inefficient. They may have succeeded in halting the spread of the pandemic but at disastrous economic and social cost. Between distancing and lockdown, the mask has gradually emerged as a third, even central, solution. The mask is central, because it is relatively inexpensive, readily available, light, easy to use, often disposable and, above all, allows the wearer to be in and out, to continue to be locked down when one is no longer supposed to be, to keep one's distance from others while getting closer to them.

How could we, as sociologists, investigate the use of masks when we ourselves were locked down? In order to meet this challenge without resorting to arbitrary and partial solutions of situated observations or interviews, we decided to proceed to large-scale calls for testimony. We invited people to tell us if they had masks, how they got them, what was their experience of using them and so on. Thanks to the relay of major daily French newspapers *La Dépêche du Midi*, *La Montagne*, *Nice Matin* and the newspapers of the Ebra group for the East of France (*Le Dauphiné Libéré*, *Le Progrès*, *Les Dernières Nouvelles d'Alsace*, *L'Est Républicain*)

we were able to collect on the Limesurvey digital platform a very large number of testimonies about the French case: 1018 between 3–12 April (13 days after the beginning of the lockdown); 620 between 28 May and 8 June (after the lockdown was lifted on 11 May); and 450 between 25 September and 23 October (the back to school period, when the epidemic surged again).

What kind of social relationships and forms of distancing do masks generate? Were masks devices to change habits? Even before any empirical studies were undertaken, answers from classical humanities and social sciences were already available. At the macro-social level, philosopher Daniel Salvatore Schiffer was quick to recycle the Foucauldian rhetoric of the disciplinary order by turning the mask into a 'walking prison', an aid for locking down people in a new 'correctional world'. At the micro-level, sociologist David Le Breton used a Goffmanian framework of face-to-face interaction, blaming masks for altering facial identities and diminishing the expressiveness necessary for ordinary exchanges. Masks restricted or even denied an actors' ability to continuously adjust and negotiate the conditions of social interaction. However, if the irruption of the mask undoubtedly posed political problems and practical difficulties for interactions, our study showed that such problems and difficulties were only a secondary aspect of the mask experience.

> The Evolution of Discourse
> Classes: Concerns Vanish as
> Access to Masks Increases

As mentioned, we conducted our survey in three waves in order to follow the evolution of mask appropriation during the crisis at key moments:

at the heart of lockdown, during the post-lockdown period and upon return from the summer vacations, when the pandemic returned after the pressure had, for a time, eased. The aim of this longitudinal survey was twofold: we wanted to understand how people experienced the appearance of this new object in their lives, and we wished to examine how this experience evolved over time, in line with the great moments that marked the progression of the pandemic in France. To meet this dual objective, we subjected our corpus to lexicometric processing using Iramuteq software. This tool allows users to automatically identify the main themes (called 'classes') addressed in a given corpus by submitting its vocabulary to a descending hierarchical classification (Reinert method). Thanks to this procedure, the software is able to identify the different themes addressed in the corpus and the words that are most associated with each theme. The latest version of Iramuteq enriches this approach with a dynamic approach: it is possible to not only identify the classes of the corpus as a whole but, for a corpus of texts produced at different periods, to study the evolution of these classes over time. The following graph presents the results of such a treatment applied to the set formed by our three sub-corpuses.

In Figure 5, the tree on the left shows the structure and content of the classification. The analysis of the three waves of testimonies on masks generated five classes. We have named the first class 'provision'. It refers to an order of concern based on obtaining masks in a context of shortage that made them particularly difficult to access at the beginning of the pandemic. People mentioned dried-up channels (pharmacy), stock leftover from former epidemics (H1N1) and substitutes obtained
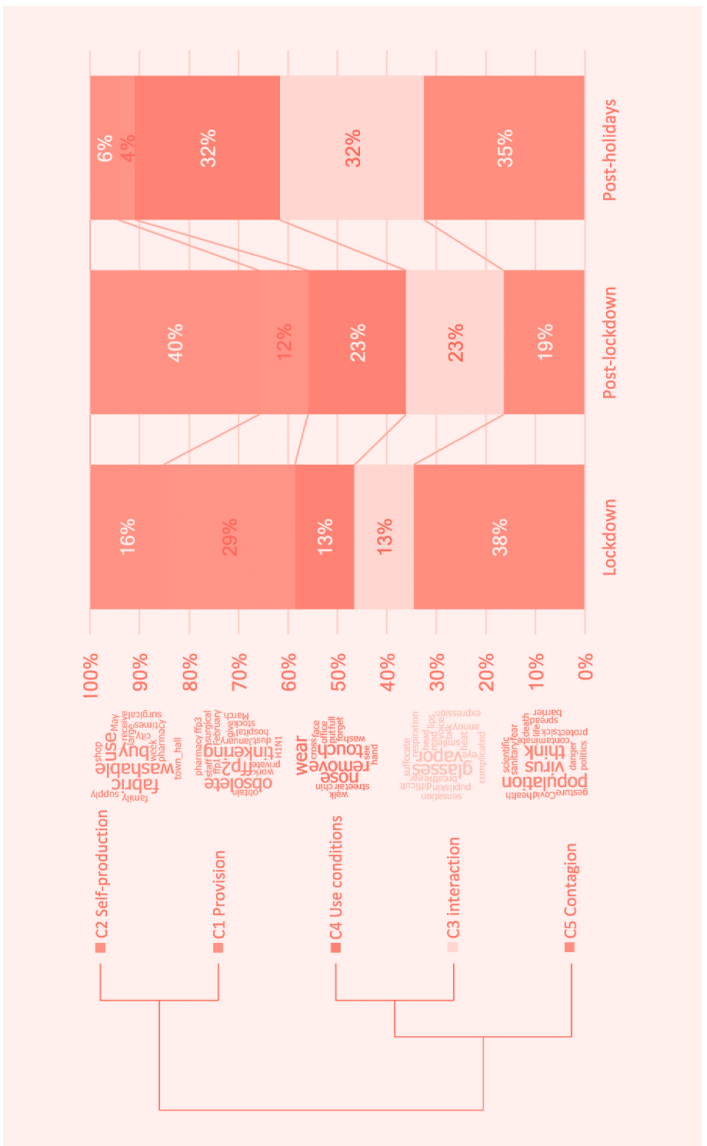
Fig. 5 Evolution of classes of discourse about masks.

by tinkering practices. They also expressed an (often bad) awareness of a zero-sum game where the endowment of some people was perceived as stripping others of their resources (staff, hospital). The second class, 'self-production', refers to the world of home-made fabric masks or cloth masks provided by the town hall. These mentions were often accompanied by appreciation of their washable character, as opposed to the disposable surgical masks. Class 3 'interaction' and class 4 'use conditions' are very close to each other and fall within the general sphere of use. Class 3 is more about how wearing the mask affects relationships with the outside world. Whether it is obscured vision because of the fogging up of glasses, difficulties in talking especially in the context of communication between teachers and pupils or not being able to read lips. Class 4 is more concerned with the relationship between the mask and the body. This refers to all the problems of use and misuse: the reprobation of masks worn under the nose or under the chin; masks that are touched excessively and the evocation of use settings such as street or office. Finally, class 5, 'contagion', deals with a set of more general and abstract concerns, combining the fear of death, the danger of being contaminated and getting sick, the threat of the virus or Covid, the constraining framework of barrier gestures and the need to protect the population, as well as wider considerations of health and politics.

The content of each of these classes is certainly predictable when taken in isolation. However, the list has the advantage of showing that general concerns are only one aspect among others and that the political view of masks is largely dominated by pragmatic and everyday considerations. In other words, in France, people

have for a time seen the mask less as a political object of social control or political affiliation (like in the USA) than as a tool to be acquired, tamed and used to manage both interpersonal and body-to-body relationships with the virus.

Above all, the most interesting result is the evolution of the relative share of each class of discourse as time passed. The chronodendogram reveals the existence of a particularly unstable universe: practices and feelings follow events, mask availability, the pulsation from lockdown to post-lockdown and back to school periods. The practical use of the masks ('interaction' and 'use conditions') have both experienced a continuous evolution, following the progressive generalization of the device. Over time, people have accumulated experience and become increasingly sensitive to the annoyances caused by the use of a device initially perceived as generic, abstract and distant.

The initial shortage of masks and the government's rhetoric about their questionable value, provided other barrier gestures were respected, had a double effect. It fueled anxiety of contagion at the beginning of the pandemic *and* the frenzied desire to obtain masks, as shown by the maximum intensity of the 'provision' (29 percent) and 'contagion' (38 percent) classes during the lockdown period. The more the government was reluctant to generalize the wearing of masks, the more valuable and desirable the mask appeared to be to the population. These two classes regressed spectacularly once the masks were finally accessible to everyone during the post-lockdown period. The decline in the concern for supply (provision: from 29 percent to 4 percent) and the decline in fears and recriminations (contagion: from 38 percent to 19 percent) were counterbalanced by

the considerable rise of home-made fabric masks (self-production: from 16 percent to 40 percent). The latter played an essential role in the crisis, by easing tensions both logistical and psychological. Do-it-yourself practices also enhanced the adoption of masks, insofar as they were not perceived as imposed from outside but as coming from within, as a personal choice. The home-made mask has also been associated with giving and sharing and has thus given ordinary citizens the comforting feeling of contributing, even modestly, to the management of the pandemic hitherto carried out by caregivers alone. It should be noted, however, that cloth masks played only a transitory, transitional role: their importance dramatically dried up once surgical masks became widely available (from 40 percent to 6 percent from post-lockdown to post-holiday periods). Here, we can see an interesting paradox: everything happens as if the reusable mask had been thrown away, whereas the disposable mask has become durable. Along the way, 'contagion' concerns rose (from 19 percent to 35 percent), in parallel, first, with the new surge of the pandemic and regulations making mask wearing mandatory and, second, with steadily growing annoyance with mask wearing (see the evolution of the use conditions and interaction classes: from 13 percent to 23 percent to 32 percent in both cases).

In short, anxiety and political considerations regressed as the availability of masks increased and as people felt better protected. At least for a time, the mask clearly worked as a vector of appeasement, far removed from the issues that preoccupied critics. In the beginning of the pandemic, lay persons did not see the mask as a device for political control but as a mundane means for daily pandemic management. The mask turned distance on its head. At the outset

of the pandemic, the mask was often perceived, by specialists and laymen alike, as the embodiment of a threat and a tool for distancing people and erasing their expressiveness. However, this perception was very quickly reversed in the population's mind as mask wearing took off. Our witnesses saw the mask not as a dehumanizing constraint but as a habilitating device. With the mask, it seemed possible to cautiously resume the course of social interactions. And while worries and dissatisfaction came back over time, this was less for political reasons or identity concerns than for practical burdens: masks obscure glasses, complicate verbal exchanges and so on.

All in all, this evolution shows a very fast change of practices. The mask spectacularly emerged as a new habit, in the dual etymological sense of the world: a habit is both an incorporated pattern and simply an item of clothes, as explained by François Héran in his landmark review of the habitus concept.

The Art of Burying One's Face

Covid-19 and the mask have invaded the world like aliens, like creatures that are all the more disturbing because they come from outside. As is often the case with aliens, social sciences are not immune, if not to errors of analysis, then at least to premature, incomplete and asymmetrical interpretations. They are sensitive to the dangers aliens may convey but sometimes blind to their positive inputs. In France, available explanatory routines were quickly mobilized. Foucauldian biopolitics made it possible to denounce the mask as a new muzzle; classical interactionism helped to see the mask as a screen that 'disfigures the social bond'. These explanations overlooked the fact that, in the Covid case, the chronology that

is supposed to go from politics to populations is reversed; they failed to see that mediations of masks were not limited to interactions between people.

At the beginning of the pandemic crisis, constrained by scarcity, the authorities discouraged citizens from turning to masks. The same citizens have, on the contrary, ardently desired, demanded and sought out masks, according to the wish to incorporate it as a new habit – a new piece of cloth and a behavioral pattern. It is difficult, under these conditions, to present the mask as a new disciplinary instrument, except perhaps in terms of self-discipline. The neo-Foucauldian reading sees what the mask imposes – the muzzle – but little of what it proposes: protection. Similarly, the mask is not just a tool for social distancing or disruption of interaction. If there is something that is supposed to be put at a distance, it is primarily the virus. Ordinary actors, perhaps less critical but certainly more concerned about the urgency of the situation, understood this. After hesitating, torn between fear of ridicule and anguish of the alteration of identity and expressiveness, they quickly saw mask wearing less as an obstacle to interaction than as a condition for its resumption.

In other words, the mask deals with the art of burying one's face in a band, both figuratively and literally. On the one hand, it is as if some analysts buried their head in the sand, refusing to see masks as a means of keeping people at a distance, less from each other than from disease, blinded as they were by the tenacious tradition of limiting the notion of social ties to relationships between people. On the other hand, ordinary actors quickly attempted to master the art of hiding their face. Figuratively speaking, they were often unaware or pretended to be unaware, that the mask protects others more than themselves. This ignorance paradoxically

underpins the effectiveness of the device: it is the generalized use of the mask that provides a vaccine-like overall protection. People also covered their face in the literal sense, they wisely took masks for what they are: less tools for controlling human masses than health barriers against pathogens. However, experience showed that the art of hiding one's face properly is very difficult. Individuals had difficulties in using the mask in the required circumstances; they often gave way to the temptation of wearing the mask under the nose or even the chin; they constantly fiddled with the accessory, which increased the risk of contamination; they rarely respected the expiry time or washing rules specific to each type of mask. They even ended up wearing masks in a new Goffmanian theatrical sense: as a way to pretend to be masked, more to avoid police sanctions than for anti-virus protection. However, whatever the use problems, far from locking us up in disciplinary control or depriving us of our humanity, masks still work as tools to contain the disease and thus help us, in the face of it, to regain our freedom.

CROWDS, CIRCULATION, CONTAGION
—
BEN DIBLEY

Among many other things, it is clear that Covid-19 constituted an unparalleled offensive on routine. No more so than in cities where the density of urban populations made them particularly vulnerable places for the transmission and amplification of the virus. This was acknowledged in the abrupt rolling out of policies and regulations – uneven in their application and unequal in their consequences – aimed at limiting the circulation and congregation of human bodies in urban spaces. Unsurprisingly, one of the casualties of the dramatic disruptions caused by Covid-19 has been urban crowds. The virus and strategies for its mitigation have profoundly interrupted the distinct routines and habits of city throngs. In doing so, the 'transformative change' that the virus provoked saw the mundane, the everyday, the habitual aspects of city life that had largely been taken for granted, suddenly appear disquieting and threatening.

This disturbance was most strikingly demonstrated in the first phase of the pandemic. The familiar buzz and shove of urban multitudes was replaced by an unsettling stillness. Scenes of cityscapes bereft of urban life became a recurring trope across different media. As Sydney moved into lockdown in March 2020, a presenter for the ABC, the national public broadcaster, commented on the disappearance of crowds. Walking along the usually packed Bondi Beach, the reporter opened with the line: 'deserted streets, shuttered shops, gated beaches … Sydney seems like a foreign country'. This observation underscored how the effects of the Covid-19 response had made the familiar strange, how the taken for granted could no longer be assumed. Other media accounts, also concerned to encapsulate the transformed urban atmosphere, described the 'empty, eerie, listlessness' of the city under lockdown and reflected on the 'fundamentally

disruptive sense of place' that the pandemic had generated. If once the past was a foreign country now, it appeared, it was the present.

Writing in the online news site *Crikey* during the early months of the pandemic, Jason Murphy elaborated on this new urban ambience. He described how the pandemic had spawned the conditions for a new 'fear of the crowd'. Like numerous commentators before him, he acknowledged that a critical precondition of urban life was the crowd: 'you can't exactly have a city without crowds', but the virus had undermined the willingness and capacity to congregate in cities. In his assessment, Coronavirus will leave the world a very different place. Even though it doesn't destroy the physical fabric of cities, what's damaged is urban residents' willingness to be around other people who are seen as suspicious, as a potential source of viral infection. Crowds, meanwhile, have become utterly terrifying. The coronavirus has triggered a newfound anxiety about crowds and the public spaces that attract them.

In its offensive on crowds Covid-19 represents a distinctive conjuncture in which to consider the mundane ways in which urban conduct is governed through the design and the organization of city space. How has the prohibition of crowd gatherings and individuals' avoidance of crowded places impacted on cities as biopolitical spaces of circulation, flow and flux? How have the measures governing crowd conduct modulated the urban atmospheres of cities, now figured as spaces of viral contagion? And how have the infectious ecologies of cities refigured crowd habits, in terms of subjects' relations to aggregations of human bodies in urban spaces and to urban infrastructures, and the virulent surfaces and infectious atmospheres, through which

these bodies circulate? These questions frame this essay. They will be addressed by exploring the ways in which crowds have been re-figured in relation to the biosocial concerns of contagion and circulation.

There is no doubt that the virus, as an entity that is both infectious and affective, has triggered the dispersion of urban crowds. And, in doing so, it has reshaped our relation with the urban throng. The pandemic has made crowds and their milieus objects of concern – for expert knowledge, for government agencies and for individual subjects: primarily as objects of epidemiological risk but also as sites of affective discord and of dis-ease. As such, crowds have demanded particular security provisions – controlling the numbers, the spaces and the times in which human bodies can circulate in public milieus – so as to protect populations. They have also provoked specific forms of individual conduct with regard to hygiene: face masks, social distancing and so on, in order to make individuals responsible for the prevention of the spread of infection.

These requirements have re-figured our relationship with the crowd in terms of both its prohibition by authorities: the banning of crowds that must not gather in the interests of public health; and avoidance by individuals fearful of the crowd and its contagious touch. In a pandemic, then, crowds emerge as entities located not only in a field of epidemiological risk but also in an anxious geography of contagion and circulation. This emergence of the crowd as a troubling biosocial entity, echoes and also refigures earlier formulations of the crowd that preoccupied late nineteenth and early twentieth century urban elites and social theorists. The figure of the crowd has been historically central to understandings of urban modernity. Classical crowd theorists, such as Gustave Le Bon and Gabriel Tarde,

emphasized how the spread of patterns of conduct were shaped by non-conscious processes and various forms of contagion.

In this way, the notion of 'contagious suggestion' developed as a major theme in discussions of crowds and masses. These conceptions of the crowd drew on, then current, understandings of hypnotic phenomena. They were also influenced by biological models of infection that had emerged from the medical discoveries of Louis Pasteur and Robert Koch and the establishment of the germ theory of disease. This new understanding of disease supplied social theory with a provocative conceptual resource in which germ theory would serve as a metaphor for social contagion. Hate, panic, hype, elation and so on came to be understood as infectious affective states that spread through the social body like pathogens. More recently, these early accounts of social contagion have been taken up in contemporary notions of 'virality' in which the viral metaphor is extended to analyses of networks, biopolitical flows and affects. Tony Sampson charts this significant development in his book, *Virality: Contagion Theory in the Age of Networks.*

However, in classical crowd theory the vectors of contagion were less epidemiological and more 'psychic'. Crowd members were cast, not as hosts for viral replication but as automatons of irrational repetition, of non-conscious suggestion. This was the basis for the negative image of the crowd, exemplified by LeBon, who characterized the crowd as a degenerative entity prone to a fickle, emotional, destructive barbarism. It was also central to more ambivalent assessments of the crowd, like those of Tarde, who explored the crowd as evidence of 'the paradox of the social'. For Tarde, the capacity for suggestibility was posited as both integral to

society, the very stuff of the social and a pathological condition that demonstrated its breakdown. In this sense, as constitutive and destructive of the social, contagious suggestibility was advanced as an ambivalent process.

While the crowd has long been a figure central to the urban imaginary and accounts of social contagion, the recent dispersion of crowds by Covid-19 also brings attention to a cast of other nonhuman actors that have been largely banished to the margins of our conceptions of urban life, such as: microbes, infrastructures, plastic and metallic surfaces, aerosols and affective atmospheres. As Bruce Braun argues, in an essay on the earlier SARS epidemic, such actors are increasingly recognized as 'actively contribut[ing] to how urban lives [come to be] composed and lived'. These entities are now subject to intense scrutiny by experts as critical human-nonhuman interfaces and conveyors of circulation through which the virus is recognized to spread. Covid-19, then, as an exercise in de-familiarizing the familiar, is a reminder that crowds are gatherings and dispersals located in, as Braun has written, 'the shifting skein of [urban] networks that mix together the biological, [social], technological, and political'. The crowd's habits of contagion involve patterns of conduct located, we might say with Sampson, 'in an epidemiological space in which a world of things' – pathogens, aerosols, bodies, surfaces and infrastructures – 'mixes with emotions, sensations, affects and moods'.

However, the concern that the relationship between Covid-19 and crowds underscores is not just that everything is *mixed* but that everything *circulates*. As Eugene Thacker argues 'not everything that circulates is biologically, or politically or economically "healthy"'. Circulation in this context

is understood in Michel Foucault's sense as developed in his lectures at the Collège de France. Advanced in his exploration of historical literature on town planning and urban government, the notion of circulation articulated governmental concerns, at least in part, with the masses and contagion. However, such concerns took as their object not the affective states of the crowd but, rather, a statistical aggregate, the population, and the requirements needed to secure its physical and economic well-being. In this context, then, circulation is used to refer to a problem of government concerned with 'movement, exchange and contact, as a form of dispersion and also as form of distribution', where, as Foucault puts it, the question for authorities is: 'How should things circulate or not circulate?' In this argument, some circulations are seen to be for the good of the population, promoting its health and its wealth, such as networks of trade and travel, while others are detrimental to the social body such as, epidemics and the spread of infectious diseases. It is in this connection that Thacker has argued when 'epidemics circulate they do so not just via biological modes of infection, but by social and political modes of contagion ... [which also] must be secured'. The pandemic on this account is always more than the disease in itself. Rather, it is the condition in which the virus came to 'be held in common' – to echo Thacker – affecting and infecting not just individual cases but 'the people', the demos. It is in this sense that the pandemic emerges as an epidemiological event inseparable from the anxious geography of contagion and circulation through which Covid-19 comes to be held in common.

Even so, the social contagions that Covid-19 provokes are variegated. Common does not mean universal. Control measures directed at the affective

priming of urban atmospheres and the preemption of the tendency to gather have not always suppressed crowds, they have also incited a counter tendency – those who gather to protest the impositions of pandemic restrictions on their personal freedoms, on their liberty as they understand it. This highlights the strange paradox of the social in pandemic: the sociable stayed at home, refusing to be a conduit for viral transmission, while those blocking the streets, as Ghassan Hage has written of the American libertarian rightists, became the virus's collaborators in a deeply destructive pact.

DATA CONTAGION

SECTION INTRODUCTION:
MODELLING DATA
—
NED ROSSITER

For many years computational systems have been accompanied by the cultural imaginary and technical unleashing of viruses hellbent on destruction. Bugs, worms, trojan horses – these are just some of the common names of malicious code designed to infect and replicate across computers and networks. With discursive attributes derived from the biological sciences, digital viruses obtain an anthropomorphic status that draws a line of equivalence between humans and machines. Both can be treated with sufficient intervention by experts in concert with a general cultural atmosphere alive to security, risk and parasitical capitalism. If viruses distributed across communication networks and through shared devices condition the ontology of the digital, what possibilities emerge for building media-theoretical concepts attentive to technical propensities and social practices of infection? Does data contagion, specifically, alert us to new circuits of distribution and modes of attack?

In the context of the ongoing pandemic, we might probe the tendency in the field of data analytics and strains of digital media studies to fall prey to the correlation fallacy. While we can agree with Bernard Siegert's intervention that 'the map *is* the territory', that maps are generative of epistemic worlds making experience intelligible as reality, we can only do so in recognizing that territory is multiplied across innumerable cartographic articulations. Maps, in short, are not always translatable as territories held in common. Sometimes they are just maps, a set of coordinates whose spatial relations are decoupled from power and knowledge.

In other words, the correlation fallacy of data analytics mistakes the diagram of relations specific to data architectures as equivalent to a world external to these computational systems. Mapping

constellations of Twitter hashtags or visualizing geographies of Google search data, for instance, will not reveal that much about the nuanced variation of material and phenomenological life external to the pervasive and always binary logic of the digital. Instead, a kind of unconscious self-referentiality haunts interface designs, models and claims of transparency and revelation through digital methods.

Moreover, the analytical grip of correlation only holds within a protocological universe of interoperability. Once a system of communication starts to falter, when signals encounter static, the rich uncertainty of contingency enters the stage and all too often glides unseen across the bridge to technical and service areas that enable the theatre of performance. We could understand such instances of contingency meddling with the order of things in terms of what Eugene Thacker ascribes to the negative (*nihil*) immanence of contagion, or moments in which data contagion presents as asymptomatic. What, then, for all those occasions in which the volatility wrought by viruses are indiscernible, in which change and transformation reside beyond thresholds of perception? Are such alien moments cocooned or partitioned by the operational logic of the machine that we assume to know?

Let me be clear, in describing contingency as external to the parametric horizon of the digital, I am not searching for ontological distinctions between humans and algorithms. Such are the conceptual limits of critiques of algorithmic bias by researchers who, as Louise Amoore points out in her book *Cloud Ethics*, frame an accountable human subject outside algorithmic power as the locus of responsibility in the setting of normative standards, regulations and codes of conduct. Amoore opts instead for a machinic concept of subjectivity

always-already enmeshed with data architectures and algorithmic arrangements.

In conceiving the international symposium and this subsequent book as 'contagion design', we have brought together two terms that perhaps sit in an unlikely or awkward relation. Particularly the term design, which we can understand not just as an aesthetic register or style but also as a plan, as a logic of organization underscored with intentionality. We can also think of design in ways that Stephen Healy and Declan Kuch outline in their chapter on 'Contagious Mutuality' – design as feedback loops, recursivity and patterns. How, then, might we extend these kind of attributes of design to the relation between data and contagion?

Essays in the previous three parts of this book address how labour and migration, alternative economies and practices of habit manifest in ways that condition and are affected by pandemic outbreaks. This final constellation of essays offers insights into how data contagion at once disrupts and affirms normative assumptions within positivistic epistemes. There's no question that epidemiology has risen to a science of government. With models enlisted to predict and anticipate virus distribution across space and time, infection rates, variation, latency, thresholds, morbidity, mortality and the like, epidemiology treats data as a tool to inform political decisions on the management of populations and economy.

In an incisive critique of the modulation of biopower in pandemic conditions, Mark Andrejevic identifies the malleability of models and their propensity to adapt and produce flexible environments responsive to the politics of contagion. Rolien Hoyng examines how electronic waste disposal and recycling are governed by

models predicated on AI solutionism, proposing instead an ecological ethics and speculative politics of care attentive to data materialities and waste in circular economies and reverse logistics. Bringing a historical attention to the crisis of nature, Orit Halpern identifies how mid-twentieth century cybernetic models of ecosystems later informed computational determinations designed to restore balance to planetary ecologies. Such perspectives ran up against governments and corporations in pursuit of financialization and volatility, modelling resilience as key to the management of uncertainty. All three essays harness a critique of logics of control and the political economy of optimization.

Contagion traffics through contact and encounter. Contagion is instantiated in the moment in which entities and particles, tissues and surfaces co-mingle. Touch is the prelude to reproduction. Data capture certain features and propensities of how contagion works in the world. To the extent that mathematical calculations of contagion science conjure assurances of certainty invested in logics of control, this final collection of essays build and enlist analytical techniques and conceptual idioms that make intelligible the social, technological and environmental life of data contagion not reducible to the logic of models. The event horizon of contagion signals the contest between data and epistemological and indeed cosmological ways of making sense of a world increasingly defined by contingency made routine. Indeterminacy is the revenge of data contagion.

GRANULAR BIOPOWER: TOUCHLESSNESS, MASS-RECOGNITION AND MILIEU MODULATION IN PANDEMIC TIMES

—

MARK ANDREJEVIC

In response to the Covid-19 pandemic, the facial recognition industry identified a new and potential lucrative market: automated doors. In the first instance, the opportunity had to do, simply enough, with anxiety about touching shared objects in a context of contagion. Doorknobs, along with elevator buttons, toilet flush handles and taps have long been objects of concern for the obsessive compulsives we have all become. All of these objects, suggestively, have to do with managing flow, but doors perhaps most directly with governing human mobility. The automated door need not 'recognize' those who pass through it, but as Gilles Deleuze and others have pointed out, when it does, it aligns itself with modulatory regimes of control. The built environment reconfigures itself in response to the presence of particular individuals, allowing or denying access, facilitating or thwarting the flow of movement through space. The pandemic moment, unsurprisingly, provided an opportunity to combine control with hygiene – a long established combination in the register of biopower. Sensor driven automated doors enable 'touchlessness', but raise potential security concerns, since they admit all, indiscriminately, within range of their electric eyes. Additional ID detection enabled by 'at-a-distance' biometrics, such as facial recognition, enables customized access control: both contagion protection and the securitization of mobility. They render the knob or handle obsolete – a symptom of the final demise, as Bernhard Siegert has observed, of bourgeois interiority and its fantasies of autonomy.

On the part of the facial recognition companies responding to the pandemic moment there was a move, for example, to replace touch-based forms of biometric identification (such as fingerprint scanners) with facial recognition cameras.

Doors would only open for those they recognized and smart cameras were further augmented with sensors that could check for elevated body temperature and the presence of face masks. Other forms of touchless technologies were developed by a range of companies to deploy facial recognition for shopping, transit and ATM access. The promise of frictionless transaction and mobility was combined with that of protection against viral spread: the tyranny of convenience redoubled by the threat of the fomite. The shared dimension was that of distance: cameras can subject crowds to a monitoring gaze in ways that fingerprint scanners and iris scanners cannot. In addition to enabling real-time identification of multiple individuals simultaneously, smart cameras can also be coupled with other sensors that operate analogously to vision: infrared scanners, gait recognition and laser sensors (to record distinct facial contours and even cardiac signatures). In this regard, they become part of a biometric assemblage that can triangulate identity while simultaneously collecting increasingly detailed information that can be used for the purposes of inferential analysis: Is someone walking differently from usual? Are they wearing a coat despite the fact that their surface body temperature is elevated? Do they pose a risk or present an opportunity?

The deployment of efficient automated recognition at a distance, a goal of both commercial and state surveillance, was bolstered by the pandemic in ways that are likely to outlast it. As a result, we were provided with some sense of how the widespread deployment of facial recognition technology might function as a form of 'granular biopower'. In the familiar Foucauldian formulation, biopower is distinguished from disciplinary power by its object: whereas the latter is exercised

upon individual bodies, the former targets the species-being of the population (another of Foucault's sideways references to Marx). If discipline operates at the level of the disposition of particular bodily movements and dispositions, biopower, by contrast, intervenes in environmental or systemic factors that might influence overall health and well-being: the building of sewers and public waterworks, the implementation of hygiene programs, health insurance schemes and so on. Although the two levels complement one another, they remain analytically distinct, running alongside one another; one set of techniques exercised upon individual bodies, another directed toward the living mass of the population. In both cases the model invokes the homogeneity of industrial mass production: bodies marching in unison, a normal distribution of the population. For Foucault, their overlap is demarcated by this figure of the norm: both behavioural and statistical. At the same time, the exercise of both modes of control are ripe for reconfiguration ushered in by the forms of automation that underwrite mass customization.

This reconfiguration was anticipated by Baudrillard's declaration of the demise of the panopticon in the wake of the generalized surveillance foreshadowed by interactive media that no longer need rely on the *symbols* of surveillance: watchtowers, smoked plastic domes, public notifications and other spectacular traces of the monitoring apparatus. The reminder that we might be being watched is obviated by the generalization and operationalization of surveillance technologies and infrastructures: the fact that these can act upon us without our necessarily having to internalize their imperatives. We are monitored more comprehensively by computational systems that remain invisible to

us than by the persisting spectacular apparatus. In Baudrillard's formulation, the norm no longer operates as a mass production template: the model is infinitely deformable, always in the process of reformation and reconfiguration, constantly adjusted and tailored: *you* are the norm.

This shift, whose logic is becoming increasingly familiar, has implications for both discipline and biopower. We see the logic of data-driven, targeted advertising generalized across the territory of the social. The entrepreneurial administrators in higher education, for example, seize upon this marketing logic as if it had not already become hackneyed. Digital pedagogy, we are told, will dispense with the 'mass' model of the lecture. Instead, virtual curriculum 'objects' (interactive lessons, texts and exercises) will respond to each learner individually, collecting detailed information about student response, interest and aptitude, prompting each one differently. No longer will students be subject to the uniformity of the disciplinary drill: their disciplines will be uniquely calibrated to their particular aptitudes, knowledge and background. The same logic applies to consumers, workers, clients, patients and so on. The de-standardization of prices, wages, premiums and services is continuous with regimes of mass customization, but it is only feasible via the deployment of automated systems of data collection, processing and response.

Perhaps the bigger shift takes place at the level of the population, the domain of biopower. If such power operates, as Foucault suggests, in an environmental register, complementing or bypassing the need for practices of subjective internalization of disciplinary norms and the priorities of power these represent, the promise of automation is to modulate the milieu at the

level of the individual. Despite this apparent process of individuation, logics of subjectification are not at issue here. It is no accident that the behavioral economics of the 'nudge' became an object of fascination (and academic acclaim) in the early 21st century: the promise is to intervene at the individual level while obviating the need for disciplinary projects and their attendant processes of internalization. At every turn we are witness to the dis-assembly of the population, from finance to media, insurance to education. From a market perspective, customization assists in the extraction of consumer surplus: the amount that any given consumer might be willing to pay over and above the mass market price. Insurance companies draw on data combined with digital devices to individualize actuarial calculations – to de-collectivize risk, and thus eliminate standardized rates. The gig economy individuates wages and rewards based on individual performance as well as upon shifting conditions of demand.

As Deleuze noted in his work on societies of control, this type of customization has its physical analogue: the spaces formerly known as enclosures must themselves become customizable. Perhaps the clearest example of this tendency – at least in its speculative version – is the anticipated development of infrastructures for so-called augmented reality (AR): the endowment of the built environment with the malleability of the platform. Augmented reality combined with the automated adjustment of physical space provides the platform for granular biopower. The development of AR technology combines ubiquitous, always-on sensing with an interactive, customizable screen accessible via portable networked devices: glasses, mobile phones and so on. The consumer-facing

aspect of this infrastructure features the familiar promise of customized convenience: streets that tell us where we want to go, shops that know which products we are looking for, offices and buildings that share with us information for our eyes and ears only. The back end, of course, is characterized by pervasive, always-on monitoring and tracking: a parametrically constrained interactive environment redoubled in the form of a fully sensorized one, which, in keeping with the contemporary platform imaginary, is likely to be privately controlled and commercially operated.

But it is not enough, for the purposes of granular biopower, that the physical environment be redoubled in informational form; not even enough that this information be customizable: that the entire world become a screen, a visual sensorium. The environment itself must become flexible. This is the goal of automated environmentality: that the very spaces through which we move re-arrange themselves in response to the actions, identities and attributes of particular individuals. We are back where we started: at the door as the figure of biometrically customized regulator. If, in Foucault's familiar formulation, biopower operates at the level of the population precisely because it operates through the environment, for the population to be disaggregated, the environment must be as well. Facial recognition startups, for example, market automated surveillance systems that are active rather than passive: they do not simply watch and record, but intervene by calling the police, restraining suspects and disrupting crimes in progress. Doors, in other words, are just the beginning: augmented reality is the informational analogue of the roboticization of the physical environment. Granular biopower envisions spaces that do more than talk

to us as individuals: responding to us as such, predicting and enhancing or thwarting our actions.

To return to the register of contagion, the response to the pandemic accelerated the development of technologies for modulating populational flows at the level of the individual. The goal was to avoid the economic consequences of the stasis associated with epidemic management: quarantine and lockdown. For Foucault, the development of biopower was associated with the shift in emphasis from epidemics to endemics. Much hangs on this distinction: epidemics and pandemics result in a forced halt: quarantine, lockdown and stasis, because physical mobility is a vector of contagion. By contrast, endemics are integrated into regular circuits of mobility. Those who liken Covid-19 to the seasonal flu argue for an endemic response. The deployment of hygiene measures – masks, disinfectant, social distancing – is directed toward restoring or retaining physical circulation while simultaneously thwarting viral circulation. The technology of mass individualized surveillance pursues the same goal via interactive technology. As we saw early on in the pandemic, the call for endemic approaches responds to the economic imperative: the flow – of goods and people – must go on! Offices closed, bistros shuttered and idle container ships painted a more galvanizing portrait of viral threat to many public officials in countries like the US than the direct forms of suffering and death issuing from the disease itself. The week in which the Ever Given ship blocked the Suez Canal elevated such economic preoccupations to the level of global memes. The repeated proclamations were familiar: shutting down the economy posed a bigger threat than that for which it was being sacrificed. The alibi for such proclamations – that

they manifested a big-picture concern for the indirect forms of suffering that might result from an economic slowdown – was given the lie by the attendant refusal to support social welfare measures that might reduce its effects.

The promise of granular biopower, traced in silicon, was to restore – and eventually enhance – circulation. Not only do digital networks provide platforms for the conduct of work, sociality and education 'at-a-distance', but they can secure circulation by modulating it in real-time – or even pre-emptively. Devices and profiling systems were developed to anticipate who might be sick before they became symptomatic.

If the goal of pandemic logic is to freeze mobility until the viral threat is neutralized, that of the endemic is to monitor transmission in real-time so that modified and regulated forms of circulation can continue. If epidemic logic is exceptional and punctual, endemic logic is continuous and generalizable.

There is no need, in other words, for dedicated tracking systems to discontinue their activities once the pandemic is considered to be over. The vexed and contested notion of such a declaration is precisely the goal of the endemic response: perhaps the Covid-19 moment will never be completely over, but will continue to manifest seasonal variations as other coronaviruses do. This outcome would provide an alibi for the normalization of pandemic surveillance and securitization (as would the economic investment in more comprehensive biometric monitoring infrastructures). Were the pandemic to come to a definitive end, other viruses would nonetheless provide justification for the heightened management of circulation, as would the indefinite threat of future pandemics. The pandemic has also highlighted the annual toll of the flu season –

a contemporary example of an ongoing endemic whose consequences might be reduced through the further securitization of circulation, which could, in turn, supplement other hygiene initiatives that may outlast Covid-19, including the (more) widespread use of hand-sanitizers, mask wearing in public spaces and routine forms of disinfection of shared surfaces.

The recent focus of biometric tracking and sorting has been on access points, such as doors, elevators, boom gates and turnstiles. The pandemic response is a familiar one: equip these apparatuses with sensors that can detect elevated risk – but risk is the shadow of opportunity. The customized reconfiguration of space envisions not simply the reduction of threat, but opportunities for profit maximization – and perhaps even the site of a spatio-temporal eugenics of mobility. The prospect of vaccine passports promises another version of the securitization of circulation: enhanced access and mobile opportunity. Driven, fundamentally, by economic logics, this version of endemics envisions the prospect of platform customization enabled by the modulation of spaces of flows.

The structure of this shift is familiar: debates over net neutrality might spill over into discussions of spatial neutrality. Those avenues of mobility once designated 'common carriers' – elevators, mass transit systems, corridors and doorways – can be automatically stratified. This is not an entirely novel development, of course, but the capability for spatial sorting in real-time is dramatically extended by at-a-distance forms of biometric sensing. License plate readers and RFID cards serve as forms of access control – but these are not irrevocably linked to individuals in the way biometric markers are. Nor, crucially, do they provide the type of inferential data that biometric sensors do. Increasingly, such sensors

move beyond identification to make inferences about emotional and intentional states or conditions. The face as interface is inseparable from other types of information it conveys, but this is true also of other forms of remote sensing: body surface temperature can allegedly reveal information not just about medical symptoms but also anxiety levels. At-a-distance readings of cardiac signatures can similarly measure levels of emotional arousal and stress.

The deployment of such systems at scale, then, can enable sorting on the basis of individual identification combined with inferential information from biometric signals. Already, for example, automated employment screening systems assess voice and facial expressions of job candidates to determine whether they will progress to the next interview stage. Threat detection systems claim to be able to infer 'malintent' from biometric markers (including facial expression) that can be read at a distance, and school-based facial recognition systems allegedly capture information about students' attention level. The goal of such systems is individuation not simply at the level of identification, but at the level of anticipated behavior, activity and achievement. Thus, environmental modulation need not respond simply to detected identity, but to inferred disposition: fast lanes and lines do not open up solely to those who have paid for them, but to those who are determined to be more likely to, say, make a purchase, score well on a test, attract attention and so on. Access and opportunities can, simultaneously, be denied or re-channeled for those deemed more likely to linger without purchasing, to start a fight, to be susceptible to contagion. Such systems share an age-old inferential logic: those features that uniquely distinguish individuals (their palm prints and faces, for example) must also be those that can provide insight

into their hearts and minds.

The inferential impetus relies upon a temporal compression: not simply the need to respond to existing conditions, but the attempt to pre-empt (the loss of an opportunity, the manifestation of a threat). Environmental modulation and pre-emption go hand-in-hand. Whereas disciplinary logic operates in the register of deterrence – and thus has passive control as its ideal (taken to the limit, for example, the cameras do not need to function, so long as they instill a sense of being watched), environmental control requires constant intervention, and hence the deployment of increasingly developed automated systems. Perhaps the Boston Dynamics robots fascinate not just because of their uncanny gymnastics, but also because this dexterity seems to endow them with a sense of individual distinctness: one that complements the drive to develop automation that matches the particularities of those it helps to govern.

The co-mingling of identification and inference results in a blurring of categories: the former operates in the register of concrete individuation and the latter in that of probabilistic prediction. The result is what Antoinette Rouvroy and Thomas Berns describe as an oxy-moronic individualization: the displacement of concrete individuals by techniques of specification. All forms of automated identification and prediction remain at the probabilistic level, but these can all too easily be taken as the attributes of particular individuals – leading, for example, to the already demonstrated willingness of police to erroneously arrest individuals on the basis of automated facial recognition. The danger of such systems, of course, is that the individualization of statistics comes to displace concrete judgments: this is perhaps what Louise Amoore is gesturing toward when she

claims that the outputs of automated systems are not decisions (or judgements?) – even when they take on the weight of determining outcomes. The threat, then, of the exercise of biopower at the granular level – and the consequent automation of its deployment – is the prospect of decision-less control: biopower without biopolitics.

TOWARD A VIRAL CIRCULAR ECONOMY? AFFECTIONS OF DATA AND WASTE

—

ROLIEN HOYNG

Would a perfectly circular economy render planned obsolescence sustainable? If so, in the case of the electronics industry, sped-up innovation and consumption would no longer undermine ecological survival as long as the circular trajectory from electronic gadget to waste to new product can be optimized. A circular economy minimizes, and ideally relinquishes, the use of new material resources by recycling used ones, along with revising product design and business models to target sustainability. Creating a circular economy increasingly is thought to involve Artificial Intelligence (AI) and other algorithmic technologies. According to experts and practitioners, there is still much room for experimentation with new applications, but it is clear to them that such technologies help optimizing the 'mining' of disposed products for recyclable materials as well as extending their lifecycles. Modelling disposal and recycling processes computationally by means of algorithms and AI encompasses numerous operations, including the sorting of waste matter and coordination of supply and demand of resources.

Electronic waste (e-waste) matter supposedly is closely monitored and no longer appears as amorphous streams of matter, notorious for its proclivity to circulate unchecked and off the radar in informal and illegal circuits. Instead, e-waste is rendered knowable through techniques of indexing, counting and forecasting. Similarly, the electronics industry purportedly becomes a 'responsible' and 'transparent' agent: numbers, charts and infographics are made publicly available, presenting the industry as self-reflexive and self-governing. But how does the technological governance of e-waste through computational modelling alter the social-technical life of such waste and the practices of recycling? And do such techniques and practice conform to

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conventional notions of corporate transparency and responsibility, or do they render these notions questionable or re-shape and displace them? An answer to these questions can be found by exploring the relation between the algorithmically mediated formal circular economy and the opaque informal circular economy. The terms by which industry actors contrast their own formal recycling practices to informal ones are indicative of corporate ecological ethics at times of AI solutionism. Yet in fact the boundary between the two circuits is ambiguous, and a more critical perspective is needed to explore ecological ethics when data materialities and waste materialities affect one another.

Let's first define waste. Following cultural understandings explored by anthropologist Mary Douglas, waste is a withdrawn, unknowable, indeterminate matter whose agency exceeds social function and knowledge. This conception echoes the description by object-oriented ontology (OOO) of materiality and seems especially applicable if we think in terms of the amorphous mass of waste streams rather than discrete, individual items. In addition, process-oriented philosophies such as Deleuze's emphasize a virtual potential: more than simply the decommissioned state or degenerated aftermath of the product, waste makes manifest a certain virtual potential, inherent in matter itself, to transform and become something else, when entering into new material and social relations. Such dynamics of material agency highlight that an object's material potential exceeds its occurrence as discrete object, classified item and labelled model and brand. For instance, e-waste can become anything from a refurbished item in the *shanzhai* tech market to a new brand product or toxic hazard. In the process of refurbishment,

material agency can be understood as the ability of solder to respond to heat in a capillary manner and fix or dissolve the connection between a charging port or battery terminal and a circuit board. Material agency is again at stake in situations where spare parts such as cameras, either salvaged from original devices or generic parts that are compatible, are able to function and receive and transmit signals. Material agency manifests itself in more destructive ways as well. For instance, substances such as heavy metals and brominated flame retardants (BFR) in plastics occur up until regulated levels in electronics (if not exceeding them), but depending on the recycling method, they could still cause harm. BFR exposure can trigger diabetes and cancer and it can damage neurobehavioral functions, reproductive health and the thyroid.

Recycling efforts seek to anticipate and manage the various possible actualizations of material potential, and substantial profit becomes possible exactly in a situation when waste has little or no value to begin with but can be monetized as it is sorted, classified, categorized and rendered into a new product of sorts. AI and other algorithmic applications promise to tackle the indeterminate nature of waste matter by rendering it knowable and its potential exploitable. In its overview of success stories in the circular economy, the Ellen MacArthur Foundation lists the collaboration between Hewlett Packard (HP) and Flex Sinctronics in Brazil to develop a closed-loop supply chain. Close to 100 percent of materials collected by Sinctronics is returned to the supply chain, some of which goes back to HP itself while the remainder, including materials such as metals, are fed into other local supply chains. For HP, this outcome not only aids its profile as a leader in environmental responsibility

but also offers cost reductions and protects against volatility across the supply chain. Remarkably, in this particular project HP collaborated with Brazilian cooperatives of informal waste workers. Yet as the Ellen MacArthur Foundation also showcases, such labour in many ways can be replaced by AI and other algorithmic applications, which is what a series of well-known tech companies such as IBM and lesser-known recyclers have already started doing. For instance, in order to sort waste streams, sensors and cameras can be integrated with machine learning for image recognition, which allegedly serves the classification and assessment of e-waste at a 'granular' level. Furthermore, big data analytics provide manufacturers with tools for predictive maintenance, route optimization in reverse logistics, forecasting of market demand and value in secondary markets and determining shifting product use patterns. In professional lingo, these applications make sure that assets are 'cascaded', meaning that they are repurposed for diversified reuse as products, component parts or materials. To cascade means to keep matter in circulation through continuous and reiterative acts of filtering, sorting and categorizing. It probes the virtual potential of waste matter and actualizes it as a series of concrete possibilities, which may change with each round of reuse and recycling.

In these examples and imaginations, AI and other algorithmic applications exert the power of control. It operates as what Massumi in *Ontopower* describes as 'an iterative practice of making in the face of the uncertain and unknown'. The unknown here is e-waste as indeterminate, unactualized potential. AI engenders control by monitoring, registering and securing waste flows in such a manner that data subsumes matter and

reduces it to code, with the objective of shaping it. Control consists in managing, organizing and suppressing material agency. To paraphrase Alexander Galloway, it operates as a formative and anti-entropic type of power that renders matter a sculpted materiality. Seeking to emulate what HP and Sinctronics achieved by deploying informal labour, some claim that truly circular economies cannot exist without datafication, the Internet of Things and (big) data analytics. By means of ubiquitous monitoring and datafication, emergent events can be transposed as codified signals in computational models. Modelling promises a radical inclusiveness of data. This is supposed to assist in reconstructing any factors and correlations making up the complexity ascribed to the circular economy and reverse logistics. Moreover, the model is supposed to be adaptive to changing and emergent realities thanks to the capacity to continuously self-learn. Last, rather than solely reacting to events, it facilitates anticipating and preempting events by responding to emergent developments.

Charting presents *and* futures, the ability to (preemptively) respond, or *response ability*, undergirds the construction and performance of 'corporate responsibility' in the formal sector. Computational modelling offers the formal sector a force of control that operates on, and intervenes in, waste's indeterminacy with the objective of preserving some kind of order, including a certain distribution of agency. The formal sector is characterized by corporations as privileged decision-making agents. Algorithmic applications do not only serve a reduction in the use of resources through an optimized circular economy. At the same time, they undercut informal circuits of e-waste recycling – something that, implied by the narrative

of the formal sector, the implementation of further layers of regulation and green standards by and large have failed to do.

However, even though the formal sector promotes centralization in multiple respects, the algorithmic apparatuses that it is increasingly eager to deploy feature a contrary tendency toward decentralization as well. For instance, decentralization is celebrated when it comes to Internet of Things applications that would allow assets to communicate among themselves and self-learn in ways that exceed the subordinary role of providing decision support. Moreover, AI integrates not only situated intelligence but also heterogenous 'gazes' as well as datasets that act as proxies with a more speculative relation to the phenomena at hand. Technically, the dual tendencies toward centralization and decentralization are unified through the use of parameters that correlate heterogeneous forms and sources of intelligence. Parameters are at the heart of computational modelling because they enable the building of a model of relations between various factors or variables, while ascribing them numerical weightings. Parameters make it feasible to deploy eclectic and messy data input, while the output is a singular decision for action based on, as Luciana Parisi argues, calculations of 'potential conditions of relationality and change'.

However, tensions between centralization and decentralization are not entirely resolved. Parametricism cultivates uncertainty and generates indeterminacy through its operation, which doubles the indeterminacy of e-waste matter itself. As many have remarked already, the knowledge generated through modelling is actionable and it affords cues to intervene in waste realities. Yet such knowledge

remains uncertain and speculative. Tackling conditions of data abundance, scarcity, plurality, incommensurability and uncertain correlation, computational modelling probes probable and possible relations and developments, where conventional epistemologies fall short. The cultivation of uncertainty is not an error but a design feature manifest in the parametric techniques undergirding computational modelling. As I have reviewed elsewhere, Bayesian algorithms, which can be combined with interval probabilities, are designed to support 'robust' decision-making based on probabilities that are 'imprecise' and reflect uncertain conditions. Fuzzy logic transposes imprecise, qualitative judgements into quantitative values. This technique serves multi-objective decision-making by weighing incommensurable objectives, such as costs, quality, security and environmental sustainability.

Whereas the use of parametric techniques implies that uncertain conditions no longer obstruct knowledge production and decision making, computational modelling is speculative and not just in the sense that it involves a prediction of future states. Rather, as authors such as Louise Amoore and Mark Andrejevic have argued, the method of ascertaining and predicting is speculative given the reliance on correlations between variables that cannot be explained or are only intuited. These correlations inform uncertain relations between factors in the model. Parisi's account of what she calls parametricism highlights ramifications that generally remain unaccounted for and indeed fall beyond the scope of corporate responsibility when articulated with and shaped by computational modelling. At stake is the generation of indeterminacy as a result of interventions prompted by modelling. This is so because speculation and intervention give rise to

new actualities – in my case, formations of waste/ data – which produces more data that inform again new speculations and interventions. The recursivity between the parametric model and the wider material reality in which it operates undermines the external 'ground' that could lend finality to modelling by 'grounding' the calculation. Consequently, in the algorithmically mediated circular economy, the indeterminacy of material life is overlaid with the indeterminacy of parametricism. In other words, indeterminacy is no longer just residing in waste matter itself but in the interactions between waste matter and computational model, or the emergent hybrid realities of waste/data. And the result is a contagious, potentially *viral*, circular economy, in which waste matter and data affect one another.

So far, I have argued that corporate response ability and responsibility mediated by algorithms aspire to introduce a mode of control that would help us realize the perfect circular economy, because waste matter is never left to remain waste as such but designated to become a new product. In the formal circular economy, the corporation acts as the key agent in waste management, while the use of datacentric discourse in corporate environmental responsibility reports suggest self- reflexivity, self-governance and transparency to the public – contrasting formality to informality. However, a closer look at the parametric techniques underlying computational modelling reveals a more confounded picture. To the extent that no human, or by extension corporation, can truly control their ramifications, computational modelling renders questionable and displaces conventional conceptions of responsibility. Pointing to instances of distributed agency in human-nonhuman assemblages, new materialists have challenged the political purchase

of the concept of responsibility. Yet a critical perspective on the algorithmically mediated circular economy would argue that the irresponsibility of the informal sector has been replaced with a new form of irresponsibility, one associated with parametricism.

However, I am not proposing that in order to restore responsibility, we need to return to means of knowledge production and governance that are less speculative. Rather, my call is to be *more* speculative. For one, speculation could open up a politics of care instead of control with regard to the indeterminate potential of waste matter. If what we need is care for indeterminate potential, we may wonder whether AI and computational models can in all respects equal the contribution of the informal actor, who deploys certain speculative means of their own. The informal collector or repairer turns to tacit knowledge, embodied sense, rumor and tinkering when exploring possibilities for salvage, reuse and repair. Such informal, speculative modes of knowing and gauging the material world may teach us something about how to act upon the indeterminate potential of waste matter and, in the style of Deleuze and Guattari's metallurgist, follow the flow of matter. Moreover, how could we conceive of e-waste's ecological impact – the full scale of effects, ramifications and complex interactions – *if not speculatively*? Embracing speculation in this regard could lead us to acknowledge uncertain, potential (current and future) instances of suffering and harm stemming from e-waste entering particular ecologies. It could have a bearing on computational modelling, too. We could probe what variables, parameters and weightings are important for an ecological politics of care but remain disregarded in current models that support the formal circular economy. This

involves, to speak with Louise Amoore, attending to the 'fork in the road not taken' and tracing the rejected alternatives not deployed in our models. Acting responsibly could mean speculating about what remains excluded and erased from current models, while caring for the indeterminate potential of waste to become otherwise.

RESILIENT NATURES
—
ORIT HALPERN

Today, in the midst of the Covid-19 pandemic, the term 'new normal' circulates ad nauseum throughout news outlets and social networks. This new normal is largely defined by a naturalization of precarity for some and the dramatic elevation of profit for others. Endless curves and data visualizations show us these 'truths'.

It is hard to gaze upon these curves and not be reminded of a history of actuarial practices involving populations. It is also surprising how tenacious the ideology of the normal is, and how reluctant we are to cease using it. The idea of the normal curve was an invention of nineteenth century human sciences underpinning contemporary understandings of economies, populations and 'race'. Our adherence to the language of the normal is, therefore, also about nature. Despite years of arguing that nature and culture have recombined and we live in a modulatory post-normal, anthropocenic and post-human society, it appears that many of us very much continue to adhere to ideals of nature. But what form of nature is this? My intent is to briefly historically situate this 'new' nature.

Populations

Few images are more prevalent right now then 'flatten the curve'. The current instantiation emerged from a 2007 article on community-based mitigation of pandemic influenzas published by the Center for Disease Control (CDC). Apparently no one can remember who exactly made it. There are precedents of course. In the 1918 Flu pandemic different urban areas were compared. During World War II in the United States similar charts demonstrated how rationing would save materials and energy for the military. I am sure there are many others as well.
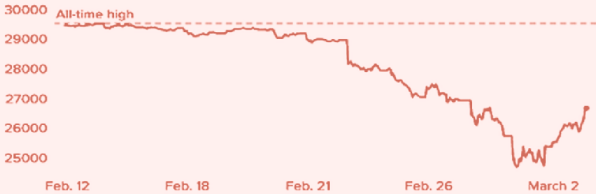
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Figure 1.

Goals of Community Mitigation

① Delay outbreak peak
② Decompress peak burden on hospitals / infrastructure
③ Diminish overall cases and health impacts

Daily Cases

Pandemic outbreak:
No intervention

Pandemic outbreak:
With intervention

Days Since First Case
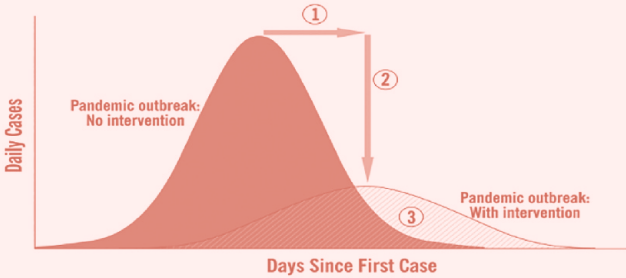
Dow mounts a comeback
Dow Jones Industrial Average from February 12 to March 2

30000 All-time high
29000
28000
27000
26000
25000

Feb. 12   Feb. 18   Feb. 21   Feb. 26   March 2

SOURCE: FactSet. Data as of market close on 3/2/2020.

4:01 pm: Dow surged nearly 1,300 points

Fig. 6   Centers for Disease Control, 'Interim Pre-Pandemic Planning
Guidance: Community Strategy for Pandemic Influenza Mitigation in
the United States – Early, Targeted, Layered Use of Nonpharmaceutical
Interventions', Atlanta: Centers for Disease Control, 2007, 18.

Fig. 7   Image of Dow Rally, Monday, 2 March, 2020,
www.cnbc.com/2020/03/02/stock-market-today-live.html.

For our purposes, however, 'flatten the curve' as a discourse has some curious features. Among them is the assumption that pandemics are inevitable and that there is uncertainty as to when and where they will start. Public health officials have long warned of coming pandemics, and such calls have become ever more visible and popular in the past few decades since the re-emergence of infectious diseases in the Global North with HIV/AIDS. Books with titles like *The Hot Zone* (1994), *The Coming Plague* (1994) and movies like *Contagion* (2011) and *Outbreak* (1995), not to mention a slew of zombie apocalypses, all virus induced, have filled our imaginaries. Virtually no one in public health doubted the possibility of another zoonotically transferred epidemic, the only question was when not if. There is, however, no agreement as to the exact moment of the outbreak. Pandemics are clouded in uncertainty but still demand to be managed. The only certainty is that they will happen, but we do not know when or where. Pandemics, in short, are 'known unknowns'.

Furthermore, the discourse assumes that the emergence of new diseases is difficult to entirely mitigate. While public health professionals and many others fully understand that better urban planning, social equity and public health infrastructures, transforming agricultural systems, improving environmental management and many other factors might change the inevitability of future pandemics, almost none of us actually believe the necessary infrastructural changes that would save so many lives will happen. As a result, we must manage this uncertain event, ergo 'flattening the curve'. In that Covid-19 spreads through the exhalation of breath and routines of life, we have to slow the metabolism of the system to accelerate the demise of the virus. This is the management of temporalities: a strategy

that assumes catastrophe will occur, but that there are ways to treat this trauma.

'Ecos'

Volatility and uncertainty were not always considered the norms of nature.

Since the Second World War, cybernetically informed ecologists had built models that understood the world in terms of homeostatically organized networked systems. Initial models grounded in communication sciences, and tested on the landscape of nuclear blast sites, valorized stability. Ecosystems were supposed to be made of feedback loops that aspired to balance systems, much like the early models of homeostasis coming out of the science of communication and control.

Imbalance was to be avoided, and systems should be managed for stability. The most extensive efforts at computing the future of the planet and its populations, *The Limits to Growth* (1972) modelled, to cite Paul Edwards, such a 'closed world' with limited resources that had to be kept in balance. As the clarion call to an emergent environmental movement, this computerized report viewed a world in need of balance, one where change was an anomaly not a norm. The computer scientists modelled human behavior and populations as aberrations producing terminal traumas on the environment that would lead to catastrophe. The answer was to restore the balance of the planet through the careful management of feedback loops and return it to a sustainable state.

But many ecologists, environmentalists and economists did not agree with the report. Ecosystems, they argued, did not appear to stabilize after suffering disruption. There could be no going
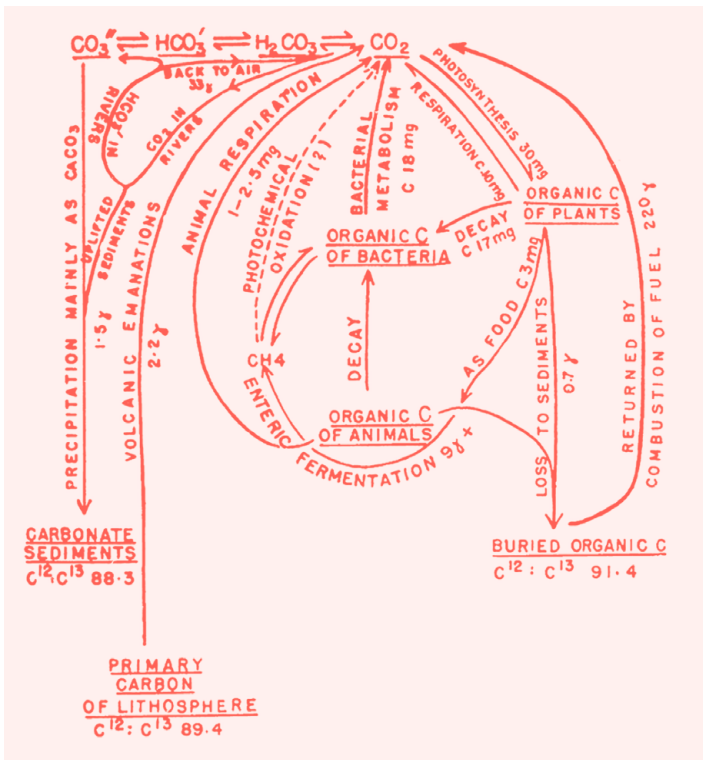
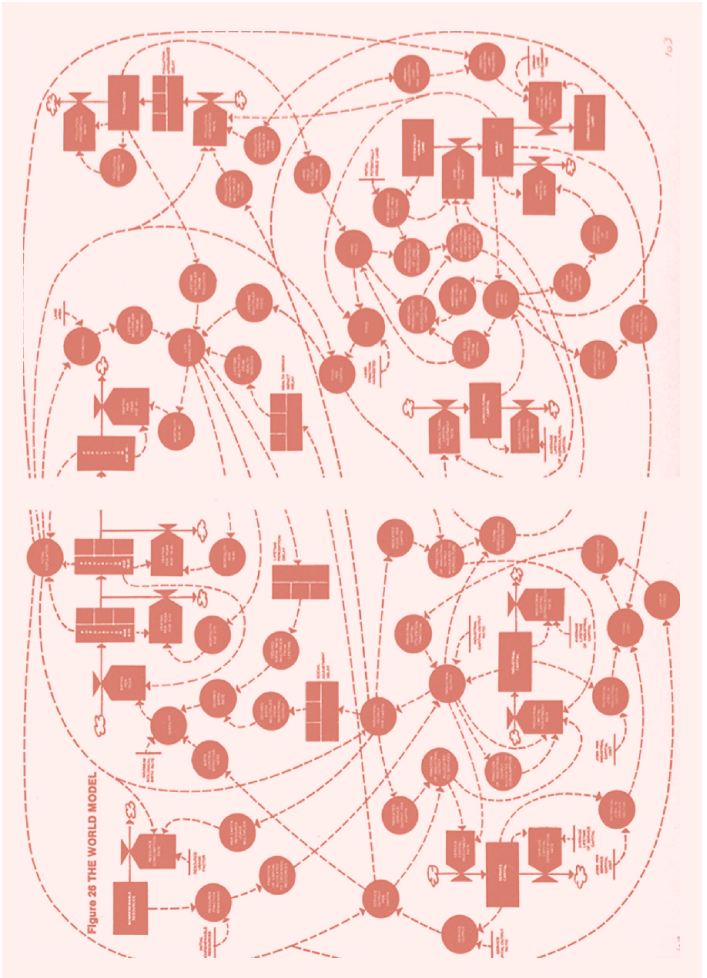Fig. 8   Hutchinson image of biogeochemical processes from Circular Causal Systems in Ecology, 1946.

Fig. 9   The World Model, *The Limits to Growth*, 1972.

back historically to a less 'damaged' planet. DDT had demonstrated destructive results impacting systems far outside the immediate locus of intended insect elimination in agriculture and for purposes of public health. Agent Orange, heavily used in the Vietnam War as a defoliant, and related dioxins were demonstrated to produce long ranging impacts in humans and ecosystems. And the list goes on. Just ceasing the use of a toxin or attempting to reseed an environment did not return systems to their pasts. Even seemingly environmentally friendly actions, such as lowering fishing quotas or replanting trees, would be found to return little result once certain levels of disruption to the ecosystem were surpassed. Nature appeared to constantly be evolving.

The economist Friedrich August von Hayek, attacking *The Limits to Growth* report, pleaded for the global community to refute such certainties and imaginaries of control over the future. Hayek and many other economists and engineers questioned the assumption that the world could just evolve without change. Do not, they asked, humans learn? And what about technology? Hayek stated, '[Man must] guard him against becoming an accomplice in men's fatal striving to control society – a striving which makes him not only a tyrant over his fellows, but which may well make him the destroyer of a civilization which no brain has designed but which has grown from the free efforts of millions of individuals'.

Hayek posited a world full of uncertainty and chance. Unable to predict the future, we should relinquish planning for management, assume that societies like ecologies emerge from decentralized networks of coordinated information through markets and refute the possibility of regulating the economy. Systems would self-organize from the 'free efforts of millions', not the conscious decision-making of

the few. And control, understood as the prediction of future events, was impossible.

These new ideas of nature came, then, within a context where older models of political economy were also in flux. The end of Bretton woods, decolonization, post-Fordism and the OPEC oil crisis, to name a few of the transformations at the time, induced extreme volatility in politics, currency and commodity markets. New financial technologies and institutions, such as derivative pricing equations and hedge funds, emerged in order to 'hedge' bets. These technologies literally produced ways to short bets and insure that risks were reallocated, decentralized and networked. Dangerous bets would be combined with safer ones and dispersed across multiple territories and temporalities (consider short bets, credit swaps and futures markets). Corporations, governments and financiers flocked to these techniques of managing uncertainty in the face of unnameable and unquantifiable risks. At the epistemological level, ecology and finance would come to share a model of a world of ceaseless volatility and uncertainty.

The question ecologists and economists turned to asking was if the prediction of the future was impossible, how were the models failing? And, more importantly, how can these seemingly un-anticipatable events be dealt with? How does one manage for radical uncertainty? And change?

Resilience

In response, a new discourse began to emerge in ecology – resilience. In 1973, a year after *The Limits to Growth,* the ecologist C.S. Holling introduced this new concept:

INDIVIDUALS DIE, POPULATIONS DISAPPEAR, and species become extinct. That is one view of the world. But another view of the world concentrates not so much on presence or absence as upon the numbers of organisms and the degree of constancy of their numbers. These are two very different ways of viewing the behavior of systems and the usefulness of the view depends very much on the properties of the system concerned.

Essentially another rebuke of *Limits,* Holling posited an alternative world; not a world without change heading towards catastrophe, but a world where change, however catastrophic, is the norm and heralds not the end of systems but rather their evolution. Extinctions happen but systems, 'degrees' and evolution continue.

Holling developed the concept of resilience to *contest the premise* that ecosystems were most healthy when they returned quickly to an equilibrium state after being disturbed. His argument was that over-emphasis on predator-prey relationships often ignored more complex interactions, and over-valued equilibrium. Nitrogen, carbon and other cycles, interactions of mutual aid, collaboration or competition between many species not structured as predator-prey relations, and a myriad of other factors might permit ecosystems to persevere in their functions even if in mutated or varied forms. Extinction might not be the limit to the growth or change of a system, unless it fundamentally transformed a complex web of interactions. The seeming absolute limit to life –
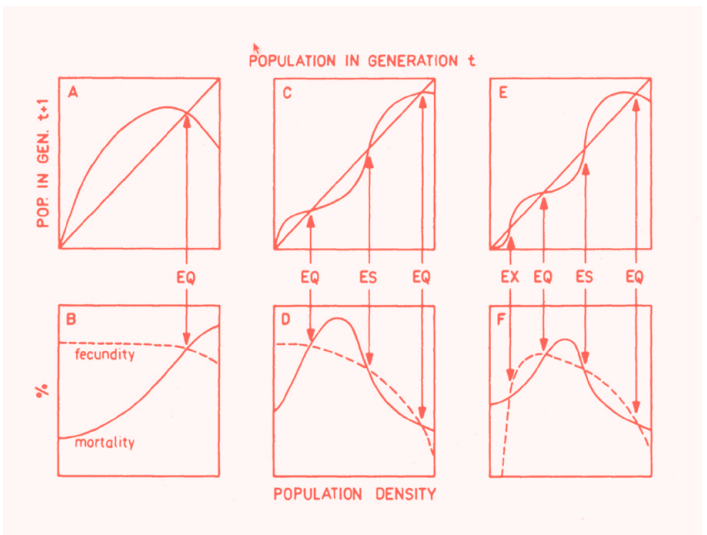
Fig. 10 Diagram from C.S. Holling, 'Resilience and Stability of Ecological Systems', demonstrating theoretical examples of various reproduction curves (a, c and e) and their derivations from the contributions of fecundity and mortality (b, d and f).

extinction – could be extended through complexity and a new value for biodiversity.

If sustainability was the language of stable systems in a cyclical economy, resilience is the language of volatility. In an early critique of industrial fishery and forestry management, Holling argued that the focus on using insecticides, re-seeding lakes with fish or attempting to simply replant one type of tree would not work over extended periods of time. *Managing ecosystems with a focus on stability was an error.* Managers, he suggested, must cease counting and taxonomically placing populations in boxes and flow charts, and needed to realize *positive* feedback is dynamic and produces change. Populations are not static numbers but ongoing processes. The important thing is to maintain the process not the steady state of the system.

For example, in the case of the boreal forest the absolute number of spruces is not important; what is important is the ability for the forest to rejuvenate and continue growing trees, which depends on fluctuating numbers of populations and constant variations between spruce, fir, birch and budworms. The system regularly changes. In general this allows the forest as a forest to continue existing. Better ecological management might also apprehend the fact that systems ultimately change. For example, forests in Ontario increasingly are used for leisure and vacationing then for forestry, and their management must change accordingly. For other systems, one might imagine a different process or processes defining them. Today, we deploy the term 'ecosystem services'.

Resilience, by contrast, denoted for Holling the capacity of a system *itself* to change in periods of intense external perturbation as a mode of persistence. The concept of resilience enabled a management approach to ecosystems that 'would
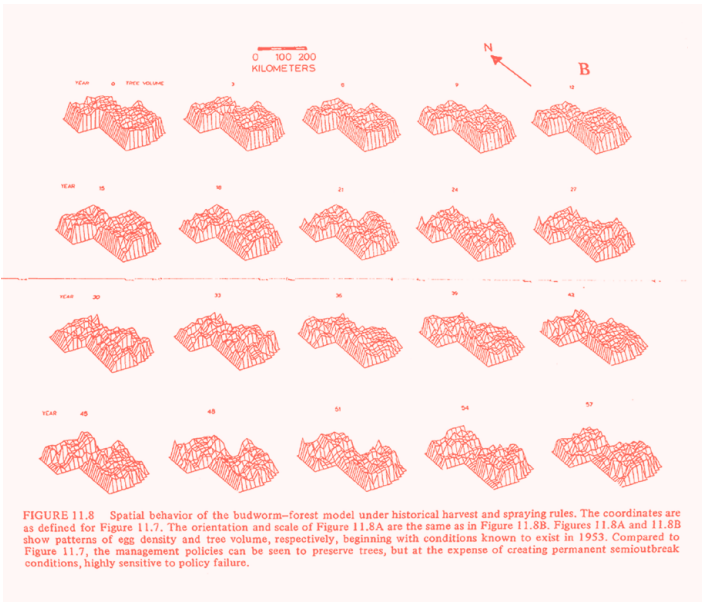
FIGURE 11.8   Spatial behavior of the budworm–forest model under historical harvest and spraying rules. The coordinates are as defined for Figure 11.7. The orientation and scale of Figure 11.8A are the same as in Figure 11.8B. Figures 11.8A and 11.8B show patterns of egg density and tree volume, respectively, beginning with conditions known to exist in 1953. Compared to Figure 11.7, the management policies can be seen to preserve trees, but at the expense of creating permanent semioutbreak conditions, highly sensitive to policy failure.

Fig. 11 Topological models generated from historical data since 1951 of budworm population densities in space. It is also worth noting that these new forms of dynamic maps and capacities to compare data sets came with the introduction of digital computation and new platforms, such as the Canadian Geographic System (CGIS), were considered the root of contemporary GIS systems in the early 1970's.

emphasize the need to keep options open, the need to view events in a regional rather than a local context, and the need to emphasize heterogeneity'. Managers had to create multiple strategies for future actions, think 'regionally', which is to say in terms of networks and connections across different territories and times, and emphasize heterogeneity, or biodiversity, in order to secure more possible routes for adaptation in case of unanticipated shocks. He would later label this from of management 'adaptive management' arguing that it necessitated the constant feedback of data to respond to constant changes.

Resilience is, in this sense, defined in relationship to crisis and states of exception; that is, it is a virtue when such states are assumed to be either quasi-constant or the most relevant for managerial actions. Holling also underscored that the movement from valuing stability to valuing resilience depended on an epistemological shift: 'Flowing from this would be not the presumption of sufficient knowledge, but the recognition of our ignorance: not the assumption that future events are expected, but that they will be unexpected'. In short, expect the unexpected. Plan for extreme events without any conception of absolute prediction.

There are three summary points I want to underscore. The first is that resilience within this genealogy assumes uncertainty and volatility as common, perhaps even 'normal', conditions. Stability and resilience are not correlated. As a corollary, the life and death of individuals or even populations is secondary to the ongoing evolution of systems. Second, resilience was a new way to model systems and therefore measure them. Instead of taxonomy and organizing populations into stable categories, one must define systems in terms of *processes*, and measure the relationships

between populations and potentially other factors (nitrates, carbon, energy, etc.). A corollary of this new approach is that past data can be used to build concepts but can never actually predict the future. Probabilities *have to* intervene. Finally, ecologists emphasized 'heterogeneity' and diversity as important to facilitating resilience. Systems without a surplus of functions and populations could not adapt. Perfectly optimized systems would collapse when change happened.

Resilience thus possesses some curious features. On one hand, the focus on processes and what today are labelled 'ecosystem' services means that some lives and populations are acceptably sacrificed as long as the system continues to operate. Trauma is a regularized and normalized as an event. On the other hand, environmental managers recognized that only systems with robust diversity, redundancy and supplementary capacities might survive abrupt and catastrophic events. Resilience fluctuates between the two poles of Darwinian evolutionary theory – survival of the fittest – and the necessity for variety and diversity within and between populations to allow for adaptability. Perfect optimization might come at the cost of adaptation.

Managing for resilience also vacillates between other debates involved in evolution – nature or nurture. Except this debate has been reformulated as code and context. Do you focus on the singular genome, or the entire landscape of biodiversity? The term allows both understandings to advance.

Resilient Speculation

This brings us to the present and to our curves. By the early 2000's following 9/11, the 2008 financial crisis, and climate change, resilience has taken

a central discursive place in fields ranging from business management and logistics to psychology. 'Adaptive management', 'business continuity management', and 'Climate resiliency planning' and many related terms are all the direct outgrowths from ecological resilience and largely shape our understanding of how changing climactic and security conditions are to be dealt with.

A search on-line for resilience in the time of Covid-19 reveals a massive number of articles, websites, and consulting services dedicated to logistics, psychology, and community activism. For managers of supply chains and corporations such as SAP and IBM, resilience is what corporations must do to ensure business continuity. 'Just in time' manufacturing is now 'just in case', and corporations are urged to increase their options, to diversify supply chains geographically, and begin thinking about plasticity in manufacturing infrastructure (being able to make for example to make alternative products), and to identify vital services and processes ahead of time. For the Trump administration and much of the world's leaders resilience is a call to expend populations they do not value – the elderly, people with underlying health conditions, people of color – in the name of saving the economy. Resilience thus becomes a mode of naturalizing violence for the Right.

This violence is naturalized through uncertainty. There is crisis of evidence and objectivity that the Right has now captured to attack the possibility of planning, regulation and legislation against disease or the defence of diversity. One the one hand, the uncertainty over the future of the pandemic becomes cause to do nothing. We don't have enough data to make a decision or, since it cannot perfectly predict the future, our data are

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flawed and invalid. In this case, certain corporate and government institutions become, to use historian of science Naomi Oreske's parlance, 'merchants of doubt'. They profit from the uncertainty inherent in complex systems, and have made this uncertainty an economic and political strategy to legitimate their actions (or lack thereof as it may be).

On the other hand, as public health ethicist Nicholas King has noted, there is a politics of evidence at play in Covid-19 responses. In the US, former President Trump made a career from the critique of elitism and a general attack on scientific forms of evidence and evidence based decision-making. The uncertainty in this case within scientific forums only facilitates the legitimacy of his critique and allows the Right to transform the catastrophe into a war of ideologies, to which Trump responds with authoritarian confidence as the superior and most valid voice, while simultaneously invoking the concept that some people should be sacrificed for the economy.

However, resilience might also have positive connotations, or faint messianic capacities, to invoke Benjamin. Recent events have highlighted other comprehensions of resilience. For many people on earth, trauma has long been a norm, but the future need not be the same. On the Black Lives Matter website, resilience is imagined as an alternative possibility, 'We affirm our humanity, our contributions to this society, and our resilience in the face of deadly oppression'. The race theorist Kara Keeling has recently argued for resilience or, citing Nassim Taleb, 'antifragility' as a figure of thought for black liberation, the possibility of building strength through ongoing shock. For Taleb, 'anti-fragility' is opposed to economic ideas of resilience, but is strikingly commensurate with ecological

resilience as explicated by Holling. While itself a neoliberal treatise, which points to another form of politics, Keeling seizes on Taleb's concept to critique economics in the present and its effort to control the future through computational and calculative techniques of derivation and commensurability. The very techniques that descend from the slave trade, and that naturalize neoliberal violence and 'shocks' as natural. For Keeling, black and queer temporalities emerge from the present, refracting the contemporary call 'enough is enough' echoed in the streets of our present. This call for a present whose future is not yet decided makes the future unknowable, but also radically different and unrecognizable from the present. This is not a concept of shock that legitimates the sacrifice of lives, but one that recognizes that for black people, and many others, trauma has been ongoing, has been continuous and can be survived. At the centre is an argument that shock may make one stronger, but resilience always admits to our ecological relations to others, the necessity for diversity and the possibility that the future of a system will never be its past. Resilience, we might recall from ecology, demands change and diversity.

Here we must contend with how we understand evolution and genealogy. Financial and logistical comprehensions of resilience largely assume a world of scenario planning and unanticipatable futures divorced from historical legacy or context. Focusing on services eliminates the need to focus on environments or milieus. The conditions of possibility for life. But resilience could also operate differently. In the spirit of Black Lives Matter, could we not understand resilience as a form of historical consciousness and actual redesigning of institutions and environments? The future does

not need to replicate the past. Resilience can be a call for multiplicity, and for futures not yet known; it could yet offer a model of ecological thinking that might defeat the optimizing demands of capital or conservatism. It might offer the possibility of not a new normal but a next nature.

An earlier version of this essay
was first published in *Social Text*,
24 November 2020.

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How is contagion designed? How do labour, migration, habits and data configure contagion? Analyzing the current conjuncture through these vectors, this book critically addresses issues of rising unemployment, restricted movement, increasing governance of populations through data systems and the compulsory redesign of habits. Design logics underscore both biological contagion and political technologies. Contagion is redesigning how labour and migration are differentially governed, experienced and indeed produced. Habits generate modes of exposure and protection from contagion and become a resource for managing biological and social life. Data turns contagion into models that make a virus actionable and calculable. New modes of sociality and collaboration provoke forms of contagious mutuality. But can the logic of pre-emption and prediction ever accommodate and control the contingencies of a virus? Taken as a whole, the essays in this small book explore these issues and their implications for cultural, social and political research of biotechnical conditions. If contagion never abandons the scene of the present, if it persists as a constitutive force in the production of social life, how might we redesign the viral as the friend we love to hate?