Surviving the Turbulent Future

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Forthcoming, 2013, *Society and Space*

> 'A wise old bureaucrat once told us: "let me control the pipes and wires and I control the city"' (Merkel and Whittaker, 2010: 133)

Abstract

In neoliberal societies, the future is increasingly being cast as unpredictable and dangerous, reason to fashion new ways of managing hazard and risk. In the process, a culture based on providing comprehensive risk avoidance and protection from an authorised centre is being displaced by one in which the authorities, experts and publics are expected to work in concert to do the best they can to resist adversity. Two emerging keywords are preparedness and resilience, intended to strengthen the human capacity to anticipate, resist and recover from adversity. Building on an earlier critique of the neoliberal calculus of risk mitigation (Amin, 2012), this paper turns to the machinery of urban maintenance and to the trysts of embedded welfare democracy to propose a counter-position. In recognising the entanglements between humans and non-humans in the management of urban unpredictability and emergency, and also the settlements of social contract between state and citizen in social democracies such as Sweden, the paper both redefines and displaces ideas of risk management through human resilience.

Introduction

If 20th century modernism clung to the hope of progress for all and mastery over future vicissitude, our times seem to be preparing for a rougher ride, without the confidence of knowing how best to forestall hazard and risk or harness the future for general wellbeing.

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The challenge is posed by recurring emergencies that now manage to penetrate even the heartlands of state security in the North, unsettled by unanticipated or all-consuming natural disasters, infrastructural failures, biological or digital pandemics, war and terror, poverty and state failure, and capitalist profligacy. Governments and experts are beginning to think the future as ungovernable, radically uncertain and dangerous, a test to established cultures of risk management based on honed technologies of prediction, prevention and protection. There is an emerging sense that the tried tools of governance are inappropriate for the new circumstances. Thus, the tradition of forecasting based on linear projections of past trends is considered unable to anticipate the surprises thrown up by a world system in disequilibrium, the 'all-protections' approach entrusted to the state and delegated experts is judged too rigid and panoptical in addressing risks that are plural, distributed and evolving, and the legacy of comprehensive protections against mishap is described by insurers as too costly an age of large-scale damage (Jasanoff, 2010).

A new language of anticipating and managing the future is beginning to form in states most convinced by the need to alter the calculus of control. These happen to be neoliberal polities such as Britain and the US, keen to move away from an all-protections and state-dependent culture of risk management on ideological grounds, but also to place themselves at the vanguard of acting upon the future opaque and turbulent at the same time as wanting to appear on the side of laissez-faire. The result is a spectrum of diverse motilities shoehorned into a seemingly singular narrative of risk management held together by new keywords such as preparedness and resilience. Thus, on the side of finessing certitude, governments, research organisations and businesses are investing heavily in new tools to see and act in the dark. This includes relying on risk forecasting methods based on probabilistic calculation, aided by sophisticated models offering close to real life scenarios due to their parametric and temporal responsiveness. It includes developing weapons of surveillance, resistance and attack to forestall or repel threat, shrouded in alarmist talk of catastrophic endings and erosion of the liberal way of life without aggressive intervention against would be terrorists, failed states, viruses, germs and toxins (Dillon and Reid, 2009; Massumi, 2009; Ophir, 2010). It includes engineering

new bodies, states of mind and heroic or entrepreneurial subjectivities to tackle risk by taking risks in order to emerge victorious, more resilient (Rose, 2007; O'Malley, 2010; Thrift, 2011; Cooper, 2008).

On the side of accepting incertitude, these polities increasingly reference their liberal traditions as the means of confronting a future of permanent insecurity and unavoidable danger. Whereas the earlier 'command and control' approach worked on placing public trust in a panoptical authority, today the outpouring of government advice, expert opinion and stories of survival in the public sphere speaks of the limits of centralised risk management, the heroism of individuals who spring forth during an emergency, the desirability of personal contingency plans, the need to lower public expectations, and the indispensability of public vigilance and involvement. Through such exhortations, the uncertain future is rendered a shared societal problem, an opportunity to temper the furies of fate through individual and collective empowerment. Any inconsistency between narrating the future turbulent as governable and ungovernable, or opportunity and threat, tends to be smoothed over by a new lexicon of words with ambiguous meanings, often placed side by side. Two that have shot into general circulation are 'preparedness' and 'resilience', together alluding to the inevitability of danger and disruption, tempered by the ability to anticipate, resist, minimise and recover from mishap (Anderson, 2010).

In this paper I wish to delve into the material of resilience, more specifically the nature of the entities and motilities involved in emergency response, in order to de-dramatize and decentre the neoliberal prospectus. I am interested in particular, on the basis of evidence relating to urban survival and recovery around the world, in how the relationship between practices of situated dwelling, human response and infrastructural capability shapes the capacity to address ambient and unexpected adversity. Such are the entanglements in context of social habits and technological systems that it makes little sense to speak, at least normatively, of regime shifts and clinical transfers of responsibility in the norms of mitigation. The future turbulent will be addressed through the specificities of location, no matter how loud the neoliberal drum beats. This is not to elevate the status of the local and situated; far from it, for the entanglements between institutions, infrastructures,

technologies and people may or may not be up to the task. Some locations are able to resist adversity and also bounce back, while others less so, and in any case, it is not as though the atmospheres and instruments of national cultures of risk management do not course through places.

My interest in the situated stems from a desire to understand the sources of resilience among large physical concentrations of population confronted by unexpected or ambient adversity of an extreme nature. Here, the risks of scale and spread are high, the heterogeneities, differences and disconnections immense, the contingencies and surprises of complex organisation constant, and the capacity to protect a dispersed and hybrid population always precariously balanced. In cities the stakes of widespread damage are high, as is the exposure to risk and uncertainty. They are open and complex entities and much of what goes on in them is hidden and barely known. Yet, there is ample evidence to show that cities are also sites of risk mitigation and effective recovery from hazard, though degrees and temporalities vary from place to place. In the literature – resonant with the neoliberal turn towards active subjects – much is made, for example, of the ingenuity, fortitude and solidarity of urban dwellers in the face of adversity. This paper, instead, traces the capacity to protect or bounce back to the hidden machinery of maintenance and repair located in the technological-cum-human intelligence distributed across a city's institutional and physical infrastructure; there as active agent or as available slack. This, even in the city of rudimentary infrastructures, where any resilience is found to lie in the ways in which humans learn to dwell the city as well as improvise with the help of various kinds of material.

The purpose of the urban example, in relation to the claims of the neoliberal turn, is to note the agency of regimes of urban maintenance and repair – their silent intelligence and their palimpsest quality. It is not to propose the neoliberal calculus and machinic urbanism as equivalents or substitutes, for while the latter might shape local outcomes, the latter as a regime of worth has the power to alter policy and practice across the societal landscape. Noting the urban sources of resilience will not neutralise the political steps to strip back the state, narrate the future as calamitous, dive into purported

offending subjects and prepare vigilant citizens. In fact it may even give reason to the neoliberal calculus to fold the urban 'unconscious' into its variegated toolkit, in the meantime leaving people and places without means exposed and vulnerable. Surviving the future in ways that do not depend on local capacity and human capabilities alone requires delegated responsibility, central protections and a good measure of cross-societal commitment. It concerns the viability and efficacy of universalist regimes of worth in a world of accelerated risk and uncertainty.

Accordingly, the second part of the paper turns to Sweden as a social democracy that if anything has reinforced state involvement, asking little of citizens in the process of emergency management, investing in spare institutional and infrastructural capacity, and remaining committed to an all-protections risk management approach. The purpose of the illustration is not to propose the Swedish model of risk mitigation as the antidote to the neoliberal model, for it relies on levels of resource, a social contract, and a political legacy that cannot be replicated or deemed sustainable elsewhere. Instead, it is to question the inevitability of the neoliberal model as well as expose its provincial interests. It is also to contextualise machinic urbanism and other forms of local preparedness. With slack and redundancy built into the nation's institutional fabric, the response to emergencies of various kinds and scale and its efficacy has not depended upon the quality of local ecologies of survival and organisation, since it arises out of a trans-local commons, coursing through, but not of, individual locations in Sweden. Put differently, if machinic urbanism in its various guises is singled out in the paper as an important means of tackling the turbulent future, it is so because in countries beyond the heartlands of social democracy, the commitment to a system of universal protections has weakened. Both offer slack and redundancy as the means of preparedness, but only the latter underwrites the population at large.

The Spirited Urban

A new genre of writing has emerged interested in cities as resilient entities; formations that manage to survive and bounce back from catastrophes and emergencies of various kinds over their long histories. It takes its cue from this kind of observation:

> 'Subjected to everything from earthquakes to smart bombs, cities are among humankind's most durable artefacts. Whether they are reconstructed to accommodate and restore ongoing urban life or rebuilt to serve as sites for periodic visitation and commemoration, it has become exceedingly rare for a major city to be truly or permanently lost' (Vale and Campanella, 2005: 5).

What explains this durability, and more specifically, the ability of cities to stave off danger, minimise its casualties, and recover? Should we turn to their military, organisational and leadership capabilities, to the skills and machinery honed over time to defend large compacts of diversified life? Or are the clues more hidden, in the character of cities as complex systems whose variety, churn and latent capabilities act as a reservoir of innovation and possibility during a crisis (Lahoud, Rice and Burke, 2010)? Perhaps we should turn to the prosaics of urban infrastructure at the key to survival, reimagined as a metabolic machine that secures the flow of information, knowledge, aid and vital resources across the urban landscape (Graham, 2010; Sims, 2010; Hodson and Marvin, 2009; Marvin and Medd, 2010; Gandy, 2011; Swyngedouw, 2004)? What, finally, of reports from the ground during an emergency that speak of human resilience, creativity and solidarity, as the prime qualities that temper the scale destruction and speed of recovery (Solnit, 2009; Birch and Wachter, 2006; Natural Hazards Center, 2003)?

What is implied by this probing into the urban mediations of hazard and risk is not only that cities have long had to deal with major calamities but that they may have done so through forms of response that are not reducible to designed invention or intervention (in the way assumed by a narrative of the present as a particularly turbulent time in need of a new calculus of control). There are latencies, accumulations, and contingent vitalities at

work, some of which are revealed below. One important contingent vitality is the behaviour of crowds in the midst of disaster, which, counter-intuitively, turns out to be surprisingly cooperative and orderly (Cabinet Office, 2009), and central to delivering care and rebuilding lives and livelihoods. This is confirmed in Rebecca Solnit's (2009) detailed study of major disasters in Europe and North America over the last 100 years. Solnit shows that during the earthquakes in San Francisco in 1906 and Mexico City in 1985, the Blitz and 7/7 in London, and the 9/11 attacks in New York, social inventiveness, altruism and solidarity quickly came to the fore after the first moments of shock and disorientation. These disasters did not see any surge in chaotic, feral, selfish or apathetic behaviour, but instead, crowds quickly broke down into groups attending to the welfare of the weak and the vulnerable, and working together to rebuild homes, businesses and supply. Strangers under duress became collaborators and builders[1].

Solnit's observations are replicated in many other first-hand accounts of social mobilisation during an emergency. For example, a study of how college students were affected by the 9/11 crisis finds that 'three-quarters of the participants reported that since the attacks they had new priorities about what is important in their lives, had new respect for people in their community, appreciated each day more, discovered that they are stronger than they thought they were, and learned that they can count on others in times of trouble' (Sattler, 2003: 321). This kind of awakening is said to explain the surge in volunteer effort during an emergency when people are 'compelled by needs to help others by being of service and to help themselves by constructing new meaning' (Lowe and Fothergill, 2003: 309). It is said to explain the donations made from all over the world and the tireless contribution of local survivors during the 2004 Asian Tsunami (Clark, 2007 and 2010), the kindnesses of communal giving during Katrina (Birch and Wachter, 2006), the willingness of people to rebuild Berlin and Warsaw with their hands after they were razed to the ground at the end of the Second World War (Ladd, 2005; Goldman, 2005), the burst of grass-root energy after the 1906 San Francisco earthquake (Rozario,

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[1] Solnit is clear that this is not a feature of all disasters, and suggests interestingly that in situations of engineered hysteria, such as Hurricane Katrina in New Orleans that became overrun by hysterical media reports and heavy-handed authorities, popular initiative is quashed, vilified and corrupted, and the process of recovery compromised and divided.

2005), witnessed approvingly by the very theorist of the self-organising 'pluriverse', William James.

If it is the case that mass emergencies bring out the best in people, does this not endorse the neoliberal argument for greater public involvement in risk mitigation? It might, if there were no other intervening factors. One of these – noted even in studies that speak of human responsiveness – is the rapid dissipation of social energy after a few hours or days if organised relief is still not missing and survivors begin to lose hope, or when rumours of authorised and unauthorised malfeasance, domination and self-interest spread. The moment of rule by numbers is brief and fragile, contingent on other mediations of the situation. Most significantly, especially in cities with still functioning infrastructures and coordinating mechanisms the humans are not alone, possibly not even the principal agents of recovery. At all stages of an emergency, working actively in the background is a machinery of urban maintenance, including relief organisations, calculating devices, technical systems and authorising structures – an assemblage of humans and non-humans delivering aid, managing flows and restoring urban normality.

This is so even when the authorising centres are disabled. We get a sense of this from Kendra and Wachtendorf's (2003) study of improvised emergency relief on 9/11. It notes the humans who came forth – the 'bicycle couriers who delivered food along the secured perimeter', the volunteers who found themselves 'competing for an opportunity to help', the 'chiropractors who, by skilfully allying themselves with Red Cross workers, gained access to the staging sites surrounding Ground Zero' (p. 138). But it also shows how vital it proved to re-establish a relief coordination centre. As it happens, the New York City Emergency Operations Center was housed in one of the Towers, a strategic node of accumulated technical expertise disabled when the Tower collapsed. It was quickly reconstructed off-site as an improvised compass for distributing aid in a devastated landscape stripped of familiar landmarks and a functioning transport and communications infrastructure. Relying on archived information and software intelligence, the Center became a 'cartography factory' (p. 130), cobbling together GIS and map-based intelligence to map the coordinates of the disaster, direct relief, and check off priority

zones. The bytes of cartographic intelligence became the root of knowing and acting in an opaque landscape, the hastily invented badges of different colour a way of ensuring that the right skills were directed to the appropriate zones of need.

This is one modest example, but it speaks to the proposition that in technologically and administratively governed cities, the capacity to recover from adversity on a general scale is a distributed machinic intelligence, located in the databases and software systems that make the city legible and actionable, the systems that ensure the circulation of people, information, goods and services, and the centres of authority that allocate resource and priority. This machinery of urban organisation may be crafted and handled by humans, but the intelligence locked in such animated objects as digital capabilities, codified conventions, organisational routines, and sophisticated modelling technologies, brings this machinery close to being a self-regulating network of interconnected technical systems interpolating humans to act in certain ways (Thrift, 2005; Graham and Thrift, 2007). Urban resilience, from the capacity to anticipate threat to the ability to minimise damage and recover from it, is a property of the robustness of this machinery – its interactive intelligence, its scanning capabilities, its capacity to maintain and repair the urban infrastructure, its ability to underwrite the metabolic needs of the city.

This machinery is not reducible to the urban infrastructure – the city's utilities and public services – but includes all intelligent systems involved in urban maintenance, from the city's reservoirs of conceptual and practical knowledge, to its planning and design conventions and the knowhow built into its everyday systems of procurement and distribution. How these intelligences gather around particular sites of vulnerability, including blockages in the flow of mundane staples such as information, energy, water, waste, sewerage, and food, shapes the capacity of the city to respond to events. Not only do they regulate the supply of these staples but they also act as the general means through which the technological city thinks and acts. The recovery of Manhattan after 9/11, for example, was guided as much by the heroism and creativity of the city's leaders, workers and citizens, as it was by the responsive of the communications infrastructure. Prior to the attack, Mitchell and Townsend (2005) observe, 'there was more fiber optic cable

under the streets of Manhattan than in all of Africa. The two main telephone switches in the financial district had more lines than many European nations. And there were more than 1,500 antenna structures on top of the World Trade Center's north tower alone' (p. 320). Some of this infrastructure – and its operating intelligence – remained intact, proving crucial to the speed of recovery of the financial district, the coordination of the rescue effort, and the return of the city to everyday life.

Such machinic intelligence courses through the technologically enabled city through its infrastructure, decision centres, and collective entities, directing and instantiating response to hazard and risk. Its inventiveness and robustness proves vital for general urban wellbeing and security. The cities of the world of course vary in their exposure to risk, their expertise in mitigation, the vulnerability of their populations and infrastructures, and the resources they have at hand to deal with adversity. Cities such as New York and London, with their sophisticated emergency systems, administrative capabilities, copious resources, strategic centrality and comparative wellbeing are able to absorb everyday risks but also tend to bounce back relatively quickly from major unforeseen hazards such as terrorist attacks or pandemics, compared to other technologically equipped cities with less weight behind these attributes. Then, at the far end, lie exposed cities with vulnerable populations and limited means to confront hazard and risk: Dhaka's population living on the breadline in precarious settlements and ill-served by the city's basic risk mitigation infrastructure finds itself perilously exposed to the floods that regularly assail the city. Such differences of exposure, mitigation capacity and social circumstance – the precisions of context – defy generalisation of a toolkit of risk management applicable to all cities. My suggestion, however, is that the gap in a city between situated or spontaneous response to adversity and more widely distributed protections may be explained by the depth and spread of machinic intelligence across the city's provisioning and institutional infrastructure, far more so than the always contingent contagiousness of human fortitude.

In the many cities of the world with infrastructures, services and administrations that ill serve their vulnerable populations due to bias or lack, the deficiencies of machinic

regulation leave inhabitants with little else than their own resources to confront hazard and risk. In these circumstances, and knowing that these deficiencies are likely to endure, is not the only option available one of generalising the human skills of risk mitigation and adaptation? This is an all-important question posed not only by the afore-mentioned thinking on human vitality during an emergency, but also by an increasingly influential policy literature on global poverty that by design or default turns to individuals and communities to work their way out of adversity by enhancing their capabilities, from the ability to secure skills and competences to the resources made available through kinship and neighbourhood reciprocities. Elsewhere, I have criticised the latter interpretation of preparedness as a delusionary optimism that misjudges the vulnerabilities of the poor, the circuits of power that disable the poor, and the obligations of distant others to secure the means by which the poor can become active subjects (Amin, 2012b). Here, I wish to argue that human labour in response to adversity in the non-machinic city, spirited though it may be, is a labour without guarantees and one with its own situated material specificities that defy generalisation or naïve acceptance.

A new genre of scholarship on southern cities has emerged, describing the daily struggle to get by as a form of pragmatic inventiveness honed in the face of continual adversity and absent market or public provisions, a craft of gathering all available means – wits, technologies, materials and connections – to confront uncertainty and risk (Sundaram, 2010; Simone, 2010; McFarlane, 2011; Hansen and Verkaaik, 2009). The accounts do not deny the self-preserving, cruel and exhausting aspects of this labour, but they also find much else that is skilful, inventive and collaborative. However, while revisionist interpretations in the spirit of blockbusters such as *Slumdog Millionaire* cite such virtues as evidence of human entrepreneurship and capability (see Brugmann, 2009; Saunders, 2010), this other body of writing finds explanation – without much glorification - in the practised habit of dwelling particular circumstances of lack and uncertainty. 'Residents find particular ways of dealing with those absences in particular combinations of generosity, ruthlessness, collaboration, competition, stillness, movement, flexibility, and defensiveness', as AbdouMaliq Simone (2010: 24) observes. Such combinations allow residents to stay 'attuned to the shifting interactions of gestures, excitements, languages,

anxieties, determinations, and comportments enacted across markets, streets, and other venues' (p. 38) in order to create opportunity out of a seemingly closed urban environment, in turn remaking 'it ever so slightly into something different than it was before' (p. 38) - more plural and less colonised, full of gaps and boltholes. The point then, is that pragmatic inventiveness arises in the play between spatial form and affective adjustment, not independently of the interactions, with resilience capacity formed in the continual oscillation between the expectation of mishap and the ability to bounce back.

We get a glimpse of this – and its ambiguities - in a comparative study of housing insurance in the slums of San Salvador and flood-prone areas in Manchester (Wamsler and Lawson, 2011). The study found that Manchester residents, despite waning institutional security, continued to invest in home ownership and insurance instead of taking steps to reinforce their houses against flooding, while the slum dwellers tackled a regular diet of hazards such as floods, landslides and windstorms by constantly working on their meager dwellings and setting aside or pooling scant resource to prepare for the next disaster. Without capital or external protections, and routinely confronted by severe weather, the slum dwellers had no choice but to learn how to manage risk, at the cost of neglecting other pressing needs. If their preparations presented as a form of resilience, they did so out of necessity, and at a price. The 'worldliness' (Roy, 2011) of the urban poor in southern cities bears the mark of pragmatic weariness, and is troubling as a measure of risk mitigation, for the sacrifices made are immense and the returns gained minimal and always precarious. Worldliness is an enactment of outsiders jostling for space in the city. And it is staged against a harsh political economy of access and allocation in the urban commons, where the determination of the poor to survive is met by the might of the usurious, powerful and corrupt working to maintain the status quo or ensure that change works to their advantage.

The skills honed are for access to the basics of life cut off, which elsewhere in the same city or in parts of the world are taken for granted as public goods. As Graham, Desai and McFarlane (2011:4) note in relation to one of these basics - clean water – 'for the world slum dwellers systematically denied access to formal water supplies because of their

claims of space in cities is deemed illegitimate or illegal … the challenge of even very basic hydration, sanitation or washing often involves the negotiation of complex circuits of predation, corruption and patronage, arrangements which seek to fully exploit both the nature of urban water as the ultimate, inelastic, life-giving commodity, and the distance of such communities from adequate formal water infrastructures' (pp3-4). If, at least with regard to gaining access to staples such as water, electricity, shelter, basic healthcare and education, it is the skewed political economy of urban supply that is responsible for acts of improvisation now labelled as acts of human resilience, one wonders whether more benefit would derive from fixing the injustices of access than from further enhancements of social capability.

Frames of Social Contract

A discourse centred on human capabilities plays to the neoliberal critique of state and other forms of social provisioning, even if does not share its analytical and ideological premises. Both work with the assumption that central authorities cannot or should not assume prime responsibility in protecting populations at risk. Both make existing comprehensive state commitments to public security seem somehow intrusive or cumbersome, anachronistic. Thus, if differences persist in cultures of risk management, those still loyal to an all-protections approach tends to be treated as exceptions, remnants that will crumble when confronted by the full force of a radically uncertain and calamitous future. But, what if such persistence is a product of the nature of the social contract between state and citizen, an interpolation - where still strong - to adjust rather than capitulate to changing times? Put differently, what if neoliberal decentralisation or spirited urbanism – technological or communitarian - are not inevitable transitions of risk management necessitated by the scale, ubiquity and suddenness of contemporary threat, but reflections of the balance of power between central authorities, makers of public opinion, and civil society? This would be to explain differences in risk management as political mediations, suggesting that the future of individual approaches has less to do with the changing compass of risk itself than with its societal framing and deliberation (Jasanoff, 2010; Beck, 2008).

It would mean that social judgement of the efficacy of an approach is always filtered through such mediations, rather than through cold measures alone of the disasters avoided and lives saved. So, if differences persist, even in areas of shared state analysis and concern, as Lentzos and Rose (2009) show in their comparative study of European policy response to the threat of biological warfare, they do so as the artefacts of political culture, and until the forces making it remain unchanged. Perhaps this explains why the UK has travelled far down the road of planning for community resilience and recovery after the event, while France continues to invest in contingency planning in order to avoid biological attack, and Germany remains firm to the post-war legacy of comprehensive protections at all stages of the risk cycle, from anticipation to prevention and mitigation (Lentzos and Rose, 2009). In what follows, I focus on the continuities of Swedish emergency management in order to illustrate this argument, and on this basis, to validate an all protections approach even in a considerably altered risk environment. As my aim is to treat selected emergency preparations and the controversies surrounding them as justifications of worth in their own right (Boltanksi and Thevénot, 2006), the review stops short of critical evaluations of the efficacy of the Swedish model.

In December 2010, the Swedish Civil Contingencies Agency (MSB), the unitary body created in 2009 to ensure coordinated response to all peacetime contingencies, published a 300-page report on emergency management in a complex society (Fredholm and Göransson, 2010). The report echoed the diagnosis summarised at the head of this paper anticipating more severe and unforeseen risks and emergencies in the future, it too drew on the language of preparedness and resilience, and it also questioned the viability of public reliance on the central authorities alone in risk mitigation. But interestingly, it did not ask Swedes to become more involved in emergency response, in endorsing the view that 'regarding emergency preparedness in Sweden, there is a clear expectation that the authorities will handle any possible situation and apply the necessary measures. People generally judge the emergency preparedness of the authorities as good, even in situations where obvious mistakes have been made and there have been shortcomings in both planning and execution …' (Enander, 2010: 44). The report discussed many ways of

improving the speed and efficacy of official response during an emergency, implying no break from the Swedish legacy of comprehensive state protections.

MSB identifies four sets of stakeholders in an emergency: Government Offices and Ministries, county administrative boards, municipalities and local public agencies, and the armed forces. It does not mention citizens as stakeholders. Relevant functional authorities and affected municipalities and counties are expected to lead emergency effort and involve appropriate public and private organizations. It sees its own role as that of making a system of distributed responsibility work more efficiently. Managing emergencies in an uncertain and complex environment is presented as a coordination challenge, a task of ensuring oversight, leadership and cooperation within a decentred and democratic structure of responsibility. While the neoliberal states have drawn on the diagnosis of the future as increasingly perilous and opaque to shift practice away from the principle of risk avoidance and universal protection towards that of restricted guarantees, aggressive response, and responsibility devolved to communities and citizens, the Swedish response has been to look for ways of strengthening its established all protections approach to risk management. In accepting that the future may prove more perilous and uncertain than before, reforms such as the creation of a central coordinating agency like MSB, close to the Prime Minister's office, are intended to step up effort to anticipate emergencies and minimise damage, without lowering public expectations.

This is not to say that official handling of emergencies has passed without criticism or concern.] On the contrary, the few serious contingencies the country has had to deal with – most of which have involved small tallies and rapid recoveries – have led to thorough independent inquiries as a consequence of public disquiet or policy concern. It is as though procedural learning and pubic assurance were integral components of the culture of emergency management, irrespective of the scale of contingency and its consequences, especially if the handling of an event is judged to have been controversial. The notable tests to Swedish preparedness are the still unsolved murder of Prime Minister Olof Palme in February 1986, the sinking of the cruise ferry Estonia in the Baltic Sea in September 1994 when 500 Swedes lost their lives, and the 2004 Tsunami that caught some 2,000

Swedes vacationing in South East Asia. Other sporadic emergencies such as terrorist kidnappings or bombs, fires, energy blackouts, storms and nuclear scares such as Chernobyl have generated considerable anxiety but ultimately have been contained, with limited human loss and material or reputational damage. The public and policy scrutiny, however, has been far from acquiescent.

The Palme tragedy and the 2004 Tsunami lie at the sharp end of criticism within Sweden on the authorities' handling of an emergency. There have been a number of public inquiries into the Palme murder. They found both the political establishment and the security forces wanting: overly procedural and at odds with each other during what amounted to a 'wake-up call to an innocent society, which for a long time lived in the illusion of being immune to this kind of trauma' (Hansén, 2000: 89). A lone killer murdered the Prime Minister as he was walking home from the cinema with his wife, without bodyguards who Palme himself has given the evening off. The inquiries pointed to wrong turns taken by the police right at the start of the murder investigation, which allowed erroneous assumptions and leads to settle, while the government - in shock – held back from taking charge. Dan Hansén (2003: 88) explains: 'the Stockholm Police became the most prominent decision-making unit, and remained so for eleven months. During the night of the murder, the lack of operative leadership led to inertia in regards to delegating responsibility. Unlike several other big crises in Sweden, the political establishment was rather anonymous in the management of the Palme murder. … Even though the possibility to move the management from the local to the national level existed, this option was avoided. The agencies who typically take care of murder investigations took centre stage … the Government and the Ministry of Justice acted in the outskirts of the decision-making process as tacit backers of the managerial group'. The consequence was that the investigation was allowed to malinger for a long time without decisive central government intervention.

Similar criticisms surround the 2004 Tsunami. The high-level Commission established to report on the event found that senior politicians took their time to respond to the plight of Swedish tourists trapped in the affected Asian coastal areas. It also judged the eventual

rescue effort to be uncoordinated, local Consulates to be amateurish in their response to the needs of the victims, and public communication to be poor, compounded by the overloading of emergency telephone numbers. The Commission explained these shortcomings in terms of the absence of an effective crisis management structure. Echoing the Palme investigation, it concluded that in the first stages of the emergency 'no decisions were taken by the Government in matters of importance for crisis management nor was the Government convened. Instead, it was believed that measures taken to manage the crisis within the normal procedures for the Government Offices and the Ministry for Foreign Affairs would suffice, supplemented by temporary groups of State Secretaries and Ministers' (Swedish Tsunami Commission, 2005: 511). The inquiry recommended the establishment of a strategic body close to government to coordinate effort during a major emergency, without however compromising Sweden's legacy of delegated responsibility to relevant central and local bodies. Not long after, echoing similar developments in the UK and US initiated by 9/11, the Swedish government established the body that became MSB, providing strategic direction by working closely with government and coordinating the work of diverse bodies during an emergency.

Public and academic criticism of how other incidents have been handled has been much more muted, frequently commending the professionalism, speed and efficacy of the emergency and welfare services. Criticism, if any, has tended once again to be about the shortcomings of leadership, coordination and public communication. For example, the communication of risk from the Chernobyl nuclear explosion in April 1986 has been deemed inadequate and inconsistent (e.g. people in northern Sweden were advised not to eat parsley but also told that doing so would not prove dangerous - Enander, 2010), while public officials and the owners of the Estonia have been criticized for a lack of sensitivity in communicating with relatives of the deceased and the public in the first hours of the disaster (Stern, 2001). Similarly, analysis of a tunnel fire that fused together electricity cables to leave the populated neighbourhood of Kista on the outskirts of Stockholm without power for 37 hours, praises the fire services and the local crisis management team for avoiding a potential disaster, but criticizes the power company for releasing

over-optimistic news bulletins and the Greater Stockholm Authority for failing to recognize the severity of the incident (Deverell, 2003).

But measured in terms of lives, assets and livelihoods protected, the record of emergency management in Sweden has been good, with damage kept to a minimum, resources and capabilities made plentifully available, and compensations kept comprehensive. It is generally agreed that the delegated authorities, drawing on a well-maintained public infrastructure, have managed to deliver, while public criticism of any shortcomings of leadership, coordination and communication has not damaged the tacit contract in Sweden between protecting state and protected citizen. When criticised, the state has commissioned inquiries that do not shy away from candid assessment and it has responded to recommendations through apologies, resignations, and policy changes. On its part, Sweden's increasingly multi-ethnic population with diverse cultural and political affiliations remains firm to a social contract built around a legacy of state protections, collective provisions and delegated authority in exchange of high taxes and social trust. Backed by functioning public services, a strong collective ethos, responsive authorities and generous insurance provisions, the social contract in Sweden does not skate on thin ice; an important reason why a culture of comprehensive risk mitigation entrusted to the state continues to endure. Public misgivings and critical thought have tended to focus on procedural rather than substantive shortcomings of the Swedish way of mixing social democracy, institutional transparency and accountability, and state protectionism (Boin et al, 2006).

Typically, therefore, government response to the widely accepted view that the future will intensify exposure to hazard and risk at home and abroad, has been to reinforce rather than withdraw from the principle of 'total protection', while recognizing the limits of anticipation and avoidance. In contrast to the neoliberal countries, the drift in Sweden towards the language of preparedness and resilience is not intended to restrict state involvement in risk mitigation or to imply greater uncertainty in dealing with adversity.

Instead it is meant to tighten the participation of designated stakeholders - not citizens[2] - in a process of scale-up mitigation guaranteed by the state. For example, the authorities have begun to explore how civic associations might be drawn into organised relief and recovery effort by adding their local knowledge and expertise. Similarly, the state is seeking greater responsibility from the private companies running utilities and services deregulated during the 1990s, reluctant to bear the full cost of recovery when an event can be traced to company negligence (e.g. cuts in maintenance and repair or spare capacity – see Nohrstedt, 2008; Deverell, 2003). This is motivated by concern over the gradual displacement of a culture of just-in-case maintenance by one of just-in-time repair by profit-maximising private suppliers cutting back on spare capacity and continual upgrading (Bengt Sundelius, Director of Research MSB, personal communication, May 2011). While neoliberal governments turn their back on policy reforms that have allowed strategic infrastructures and services to be run by corporations that are tempted to place shareholder dividends before safety and social obligations, in the process exacerbating risk and vulnerability (Perrow, 2007), the Swedish government has begun to look for surer forms of regulation and responsibility in order to reduce infrastructural risk and increase institutional involvement in mitigation and recovery.

The risks faced by Sweden are not the same as those faced by cities discussed earlier in this paper. No equivalence is suggested. Cities such as New York and London are vast agglomerations reliant on city-wide technological systems to regulate the surprises of in-built complexity and exposure to external uncertainty and risk, while similarly large urban agglomerations without collective means and intense vulnerabilities are left to highly localised and improvised methods to mitigate against hazard and risk. In contrast, in Sweden, the welfare state – municipal and central – is centrally implicated in the management of urban risk through a maintained national infrastructure. And so far, the all protections approach seems to have worked, but could be undermined were the

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[2] The public authorities accept that Swedes, who are known to be security conscious and risk averse, expect designated bodies to drive emergency effort, awaiting instruction on what they should do. Any concern that newer generations have lost the inclination and skill to assist in an emergency (e.g. after the Gudrun storm in January 2005 which tended to bring out only older generations in a southern Sweden incapacitated for several days without electricity and telecommunications connectivity) has yet to translate into an official narrative pressing for greater citizen involvement in risk management.

country confronted by more severe and more frequent contingencies that expose its limitations. But this will require, as I have tried to imply, active renegotiation of the social contract, the framing of risk as beyond the reach of the social democratic welfare state. It will involve political renegotiation of the relationship between state and civil society and cultural acceptance of the future as radically different from the past, not the experience alone of new hazards and emergencies.

For the present, the future of the all protections approach appears relatively secure, owing to its periodic renewal through public criticism, state reform and open debate surrounding particular events. The social democratic legacy has managed to resist the neoliberal push to present adversity as unpreventable, and best addressed through a mixture of on the spot state aggression and social mobilisation. If it yields to pressure to present this push as a global standard or through public desire in Sweden for laissez-faire, individualism, and a minimalist state, it will have forgotten that sustained investment in the public and civic infrastructure is also a form of preparedness, a reservoir of provisions and protections equipped to anticipate and disarm adversity. The institutions and infrastructures of the welfare state, the availability of unused capacity, the culture of common provision, the strict rules of institutional responsibility, transparency and accountability, the provisioning and protecting state, are all part of this process, regardless of how the calculus or risk and uncertainty changes.

Conclusion: Security by Skunkwork

Comparing machinic urbanism, the social state, neoliberalism and social improvisation says something about the agency of slack and redundancy in risk mitigation. The first two depend on preserving unused capacity and capability, technological or otherwise, as an insurance against uncertainty and risk, while the second two skate on thinner ice, relying on entrepreneurial and vigilant subject, one accompanied by the catastrophe state and the other without. I have suggested that the poor and vulnerable are badly served by just-in-case preparedness. If the provisioning state, however, remains an unlikely ally of the expanding billions who will end up as the urban poor mainly in southern cities as

most forecasts seem to predict, are there any clues for collective wellbeing suggested by the machinic city and the city of interstitial occupancy?

A body of work interested in the urban infrastructure as an enabling commons is beginning to reveal the centrality of the prosaic machinery of urban supply, maintenance and repair in risk mitigation. Latrines, micro-credit, transport networks, rights of occupancy, pipes, water pumps and electricity cables appear as key intermediaries of survival and wellbeing in poorly serviced settlements in southern cities, underwriting individual and communal effort (McFarlane, 2008; Mitlin, 2008; Stienen, 2011; Yiftachel, 2009; Chang, Wilkinson, Seville and Potangaroa, 2010). Awareness of the role of infrastructure in risk mitigation is also growing in work on northern cities, as evident, for example, in research on Hurricane Katrina that traces outcomes to the physical morphology of New Orleans, its welfare and communications infrastructure, and its risk modelling practices (Birch and Wachter, 2006), and in a study of major 20th century urban catastrophes which concludes that recovery was as much a function of maintaining hope and social networks, as of 'repairing, improving, and reusing the pre-disaster physical infrastructure' (Vale and Campanella, 2005: 347).

This focus on the collective unglamorous uncovers the silent provisions of the urban infrastructure. It also hints at its regulatory role in distributed and complex social formations. Cities are unstable entities not only because they are exposed to flows and influences from elsewhere, but also because of the sheer proliferation of life within them, constantly generating hybrid novelties, amplified reverberations, unanticipated lurches, and unintentional developments that escape intentional governance. The ability to resist or recover from turbulence is closely linked to the morphology of the urban ecology itself and its hidden rules of maintenance, as new work on urban complexity suggests. This work is still in its infancy and without exact precision of the urban sources of resilience, but one suggestion is that cities that have evolved to adapt to uncertainty are characterised by 'slack and redundancy in its networks' (Lahoud, 2010: 19). These may be networks of communication, supply, knowhow or capability: variegated, diffuse and

surplus to immediate need, and potentially available as reservoirs of possibility in times of scarcity, need and changing circumstance.

Here, the collective urban unconscious is recognised as a set of 'overlapping and seemingly overcrowded institutional configurations … effective for regulating common pool resources' (Duit, Galaz, Eckerberg and Ebbesson, 2010: 366), in an effort to stray beyond more familiar arguments that polycentric systems with multiple authorities 'tend to enhance innovation, learning, adaptation, trustworthiness, levels of cooperation of participants, and the achievement of more effective, equitable, and sustainable outcomes at multiple scales' (Ostrom, 2010: 552). Agency and intelligence is found in the fabric of urban provision and maintenance, some distance from any sociality of trust or distributed authority. Emblematically, Barthel, Sörlin and Ljungkvist (2011: 1, emphasis in original) claim that Constantinople's ability to bounce back from repeated assaults and emergencies over a 2,000-year period was not due to smart management, but the instantiation of latent provisioning capabilities:

> 'Constantinople maintained a *diversity of insurance strategies* to a greater degree than many historical and contemporary urban centres. It invested heavily not only in military infrastructure but also in systems for supplying, storing, and producing food and water. From major granaries and at least four harbours the citizens could receive seaborne goods, but during sieges the trade networks broke down. At those times, when supplies ran dry, there were possibilities to cultivate food within the defensive walls and to catch fish in the Golden Horn. Repeated sieges, which occurred on average every fifty years, generated a diversity of socio-ecological memories – the means by which the knowledge, experience, and practice of how to manage a local ecosystem were stored and transmitted in a community'.

Active memory is a key phrase. In Constantinople, awareness of different means of survival and organisation was neither archived nor dependent upon the counsel of the city's rulers, but woven into a vernacular of popular stories, symbolic representations,

and memorialized landscapes: 'monasteries, urban gardens, parks and other physical structures serve[d] as reminders of alternative uses of urban space and as opportunities to protect and foster ecosystems and public health services' (*op.cit*: 7). Its 'skunkworks', the name given by Goldstein (2009: 33) to a city's networks of urban security, provision and communication, made 'hidden potential surprises visible or unthinkable surprises thinkable'. This ability is not common to all cities, even those replete with infrastructural capability, for it requires many automated switches of response to adversity and risk, as it does distributed mnemonics – visual clues - of stored capability and inventive possibility. The urban 'skunkworks', gathered around cables, databases, silos, software, metabolic flows, buildings, highways, communications networks, waste pipes, have to be recalled as the means of urban survival and recovery through either their own recuperative force or mnemonic triggers, all the more so when emergencies tend to direct attention to everything but the prosaic and hidden.

The suggestion here is that in spaces of risk mitigation through the collective infrastructure, automaticity combines with mnemonic recall, implying that an associated politics has to focus as much on the architecture of the 'skunkworks' as on their aesthetic and affective presence. The traces of such a presence can be found in realist cinema shot in the streets of cities coming back to life after the Second World War, situating intimate stories of personal survival amidst pointed tales of housing, work, and service provision in the unfolding process of urban reconstruction. The hidden city came into view, moved audiences, and contributed to a public aesthetic of the totality of banal things in city life that affect life chances. Today, it is certain genres of science fiction that attempt to disclose and magnify the hidden city, with considerable affective grip, but perhaps less normative intent (Collie, 2011). Such aesthetic moves can play their part as a skunkwork mnemonic, raising public awareness of the resources going into and leaving gated communities, revealing the economy of waste, repair and recycling that both deprives and furbishes, exhibiting the violence of technologies of militarism, surveillance, and exclusion, animating the banal urban as life-enabling, and publicizing heterogeneous and hidden capabilities of risk mitigation. They can reveal more than that which is known or acknowledged, support new controversies and campaigns, force recognition of the urban

commons as key to risk mitigation in inclusive ways (Leach, Scoones and Stirling, 2010; Whatmore, 2009; Yusoff, 2009).

At a time when the poor are judged by their friends and enemies as masters of their own destiny rather than as the victims of injustice and disadvantage (Amin, 2012b), a spirited politics of the 'skunkworks' passes not only as advice to governing elites keen to protect their cities from adversity, but also as critical for the survival of the growing mass of the world's population living precariously on the urban margin, forced to face adversity with nothing other than their own wiles and materials they can temporarily muster. For as long as a politics of guaranteed rights for the poor remains elusive, the urban flows of staples such as information, electricity, sanitation, water, housing and education will remain central arbiters of the capacity of this population to face the future. The difference between abjection and improvisation will lie – as it already does for more than a billion urban residents living on the breadline – in the political economy of urban infrastructural distribution, in whether the poor have access to the staples of survival as public goods.

Perhaps we will all end up foraging, but in levelled ways, as Saskia Sassen (2011) muses in her postcard for the journal *Open Democracy* on a world in 2030 still struggling from the current financial collapse:

> 'It's 2030. Governments are poor and in hock to big banks. The urban poor
> and the impoverished urban middle classes in rich countries have had to
> scramble to survive. Bit by bit they have inserted a self-made urban political
> economy into the larger national/global economy of their countries. It is
> partial, but it works. Since it deals with the basics and with what people on
> their own can actually do, across the world, these urban political economies
> are quite similar. They all have such basics as urban farming and small credit
> unions. Skill-exchanges, rather than stock-exchanges, and repairing rather
> than replacing with new products, are also basic features. When feasible,
> furniture and other essentials are fabricated or grown in the city and its region

– no more unnecessary shipping that benefitted mostly the intermediaries and their lawyers and financiers. The rest of goods come through fair-trade networks, another self-made political economy connecting production sites with neighborhoods and cities. They also have had to take over some basic public services, such as garbage collection/recycling and develop home-based healthcare in the neighborhoods – they had to do something since local governments are so poor that they have had to cut all except advanced hospital care. People rotate just about everything – including daily cooking – at whatever level that works – a cluster of homes, the block, the neighborhood. People need each other to make it all viable. Nobody is rich, and we are still highly imperfect beings, but it all works …'

Another scenario, of course, is that a new, authoritarian, corporatism will have arisen, preying on disorder, uncertainty and risk for its own ends, in the process denying the yeoman democracy outlined by Sassen (see Beck, 2008 on how the failure of governments to manage risk society raises this possibility). There will be no parallel universe, only the one still colonised by the powerful and the dominant. Surviving the future in the way Sassen imagines will require organised counter-power, but it may also benefit from preserved and fairly distributed public goods.

Acknowledgements

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