Infrastructure and Event – Urbanism and the Accidents of Finance

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In his 1977-78 lecture *Security, Territory and Population*, Foucault argues that the science of modern urbanism arises with the political problem of circulation. With the growth in commerce and migration in the 18th century, the necessity of permanent exchange between the city and its outside demanded a whole rethinking of political method. Early modern urbanism is interested in what flows in, around and out of cities – people, traffic, livestock, merchandise, money, water, air and climate. It monitors the dynamics of flows and the material conduits that enable, channel and divert their circulation– roads, rivers, canals, postal networks, miasmas – in and out of the urban centres. In the eyes of the early urbanists, the problematic of circulation is all about ‚actions at a distance'; movement which inscribes itself in a non-metric field -- le milieu – and suppresses time and space (2006, 21). Modern urbanism demands a form of political control that works on the future, in a probabilistic mode: ‚'one works on the future, that is to say, the town will not be conceived or planned according to a static perception that would ensure the perfection of the function there and then, but will open into a future that is not exactly controllable, not precisely measured or measurable' (2006, 20). Its horizon is the contingent (l'aleatoire) and its repetition or seriality. Foucault describes this as a politics of the *event* and defines its mode of power as one focused on ‚security'. In this way, Foucault combines infrastructure, circulation and the event as the crucial, mutually connected elements in a modern problematic of security.

These observations on infrastructure and event can usefully be read alongside the work of Foucault's collaborators, who have written extensively on the problematic of risk which emerged over the same period. ‚Risk is the term that political economy has assigned to

the calculable event. It refers to the fluctuations of fortune attendant on circulation – and attempts to assign them a price. In his extensive genealogy of the 20th century welfare state, Francois Ewald suggests that risk first emerges with the growth in international trade and the problems posed by movable assets, maritime exploration and the dangers of sea travel. ‚'Insurance is the child of capital. It is a form of security that makes no sense in a feudal economy, where property is tied to land and the individual is held to familial, religious and corporatist forms of solidarity. On the other hand, it becomes necessary when fortune becomes mobile, when capital begins to circulate and finds itself exposed to the dangers of circulation. It is no accident that the first form of insurance was maritime insurance' (1986, 182). While the work of Foucault and his collaborators is focused on the rise of insurance-linked forms of risk management, culminating with the actuarial vision of the 20th century social state, it also points to the essentially speculative forms of risk management that proliferated in the trading centres of early modern Europe. Prior to the consolidation of the welfare state, Ewald observes, the distinction between the two was far from clear (1986, 181).

Foucault's account of the rise of urbanism is promising not only because it displaces the problematic or urbanism away from the geometrics of space time, focusing on circulation rather than the localization of power, but also because it suggests a genealogy of the event and its relationship to infrastructure. Considering that Foucault's genealogy of risk stops roughly with the 20th century welfare state, how can we put these insights to work today? If the 20th century welfare state offered an actuarial vision of urbanism, crisis response and risk-management, what is the peculiar politics of the evental in which we find ourselves today? Urban theorists such as Graham and Marvin, Neil Smith, Brenner and Theodore, have pointed to the profound shifts in urban infrastructure that have occurred over the last few decades, arguing that the privatization and deregulation of formerly public networks such as transport, water, telecommunications and energy have been integral to the strategies of urban neoliberalism. If ‚selective urban regeneration represents one of the major strategies of neo-liberal urbanism, as argued by Neil Smith, I want to suggest that disaster preparedness and emergency response have become integral to this process.

In turn, these developments need to be situated within the context of emerging forms of capital circulation that are themselves exercising a recursive influence on the dynamics of urban regeneration. Two recent, very different studies in political economy have explored the central importance of derivatives markets in generating new, non-actuarial forms of risk management (Bryan and Rafferty 2006; Lee and LiPuma 2004). The pricing of infrastructure and its 'accidents' or its 'events' is itself one of the processes that has contributed most intensively to the growth in derivatives markets over the past few decades, while the infra-structural landscapes of cities are themselves recursively bound up in the volatile movements of financial markets. According to these accounts, the politico-economic restructuring of the late 20th century has inaugurated an ‚event-based' capitalism in which the trading and leveraging of events replaces the exchange of commodities as the decisive force in shaping political relations and urban geographies of power. Foucault's analysis alerts us to the long history of the ‚event' as an object of political calculus. Thus the problematic is not one of simple historical transition – how did late 20th century capitalism become evental? But rather what is the peculiar event-form that is mobilized by contemporary capitalist relations? And what becomes of risk in a context where the very predictability of the future is under question?In this article, I attempt to outline the complex interaction between financial markets, urbanism and crisis response in the metropolitan centres of the US. In the conclusion, I suggest that these developments were anticipated and tested out in the context of humanitarian intervention and complex emergency in the course of the 80s and 90s. In the process, the contemporary politics of the ‚event' reveals itself in both its strangeness and its familiarity, returning us to pre-welfare state modes of risk-management, privatized urbanism and speculative finance even as it invents strikingly new problematics of its own.

Capitalism of the Event

Derivatives are contracts that allow a business to hedge against the occurrence of unpredictable, adverse events ranging from exchange rate fluctuation to political turmoil and

extreme weather. Traded in the financial markets, derivatives also allow investors to wager on the relative chances of the derivatives contract itself, effectively transforming the risk-hedging contract into an instrument of speculation. Janus-faced, derivatives merge the actuarial and the speculative, circulating as hedging instruments and wagers at one and the same time. A recently published manual for the derivatives trader urges the reader to adapt to the ‚temporality of the event' (Webb 2006). What follows is a series of chapters introducing the investor to the complex menu of events now available for trading. Volatile weather, exchange rate fluctuation, a turbulent political climate – all of these provide occasions for entering into a derivatives contract. So too do the field-like catastrophe risks – from financial crisis to hurricanes or extreme precipitation events -- which materialize once a certain, critical threshold of turbulence has been crossed. Where the neoclassical economist discards the unexpected event from his calculus of the future, the trader in derivatives focuses on the fluctuation itself and the critical points at which an unexpected event might happen to occur. Derivatives-trading demands a particular kind of relationship to the future, one that might be characterized as speculative, as opposed to predictive, expectation. Since the price assigned to the future is itself a function of the collective expectations of all traders, no single expectation can hope to offer a rational forecast.[1]

Barely visible in earlier decades, the trade in financial derivatives -- futures contracts on financial instruments – has expanded dramatically over the last several decades, doubling in volume in the seventiees, increasing seven fold again in the 80s and now far surpassing trading in all other futures markets. Derivatives have been defined as the 'functional form that speculative capital assumes in the market-place' (Saber 1999, 128). Bryan and Rafferty describe them as the new ‚money form' of contemporary capitalism. This is not to say that derivatives didn't exist prior to the 80s. While standard histories trace their origins to the large-scale derivatives markets for agricultural commodities that were first developed at the Chicago Board of Trade and the New York Stock exchange in the nineteenth century, derivatives in the form of futures and options were traded in the ancient world and represent

one of the oldest forms of monetized exchange ever documented (B and R 2006, 90). However, it is the particular kind of derivative – the financial futures contract – that dominates trading today, as well as the scope and integration of international markets, which marks the contemporary trading in derivatives as something wholly new.

Derivatives markets have flourished as a direct result exchange rate liberalization and the dismantling of New Deal era restrictions on speculative capital. Regulations established with the New Deal have been dismantled since the 1970s, gaining momentum under Reagan and accelerating in the 1990s with Clinton and George W. Bush. Since the high inflation of the 1970s, the walls that divided securities from banks and insurance firms have been systematically weakened, culminating in the formal repeal of the Glass-Steagall Act in 1999. Alongside this process and as a response to it, the market in financial derivatives has expanded dramatically, with the swap market growing from nothing in 1980 to a value of $45 trillion by 2002 (Prins 1999, 129).

The phenomenal rise in derivatives trading is closely linked to the privatization and ‚deregulation' of infrastructure networks. When a market in water or communications or electricity is highly fragmented, as is usual in the immediate aftermath of privatization, the service provider is left to cope with the unpredictable fluctuations of supply and demand that would once have been offset by the long-term investments of the state. In the absence of suitable insurance, a derivatives contract can be created in order to hedge against the risks associated with the circulation of electricity, communications or weather. It then becomes possible, indeed even more profitable, for the investor to wager on the volatile fortunes of infrastructure itself. Thus the private infrastructure companies spawned by deregulation in the 90s essentially become trading companies, deriving their profits from the volatilities associated with the flow of energy, electricity and telecommunications rather than the provision of the service itself. As suggested by Lee and LiPuma, this is a mode of capitalism which profits from the risks associated with its own connectivities, at increasingly greater levels of abstraction, moving from the actual material connectivities of infrastructure to their associated risks, to risks associated with the circulation of those risks, and so on. And when

derivatives trading begins to predominate over the trading in assets and stocks, such companies have a vested interest in generating ever newer markets for relational exposure and hedgable risk, diversifying into ever more arcane fusions of risk or creating new instruments de novo such as the burgeoning market in volatile weather products. The curious effect is that climate change has become a speculative instrument like any other for a market hungry in critical events.

Prior to 1980, the bulk of derivatives trading was in commodity-related futures allowing buyers to hedge against future price changes in a given storable asset such as wheat, cotton etc. and each of these categories was traded separately. Forwards, futures and options are all derivatives contracts that speculate on the price volatilities of storable commodities, with differing degrees of abstraction. From the 1980s, however, these contracts were rapidly superseded by derivative products that could be applied to non-storable products such as financial instruments and repackaged amongst themselves. Not only did futures markets begin to be dominated by transactions on financial instruments, but new types of derivative contracts such as swaps emerged that were from the outset financially oriented and could not be understood through the discourse on commodity derivatives' (B and R 48). In the process, it is the very relationship between the measurable ‚substance' of the commodity – its stored value – and the event-related nature of price that is reworked: where traditional derivatives contracts traded in the future prices of commodities, financial derivatives trade in futures of futures, turning promise itself into the means and ends of accumulation.

In this regard, derivatives pose a number of challenges to orthodox theories of money. If money is time, then time is no longer that which measures the movement of commodities and the labour invested in them. In what are called the money markets, money mediates itself and time relates to time, becoming a function of its own fluctuation (Lee and LiPuma 2004, 118). Derivatives thereby challenge the idea that there must be some fundamental value underlying the circulation of money. Indeed what derivatives trade in, according to Bryan and Rafferty, is the very *contestabability of fundamental value*.[2] As a result of climate change, we

can no longer predict the weather and its effect on prices, even in the short term. Its parameters of variation are unknowable. Yet we can create a derivatives contract allowing us to wager on this very uncertainty. The derivatives contract also challenges the causal definition of money in its relationship to debt. If all money is born of debt, with its double reference to promise and obligation, then what is the particular debt form of the derivative? Derivatives work through a process of financial leverage – using debt (borrowing) in order to generate surplus, which can then be used to borrow an even higher amount of money.[3] The generation of surplus from debt is the classic form of capital accumulation, first identified by Marx in his formula for interest-bearing capital M-M'. Yet the leverage effect is magnified many times over in the case of derivatives, where what is being exchanged is not simply a future claim to a given commodity (labour) but a future claim to futures, at increasingly higher levels of abstraction. When different kinds of derivative instruments are combined together, relatively small wagers allow for an extraordinary degree of leverage over vastly greater amounts of assets.

In an international financial regime in which fixed exchange rates have been abolished, derivatives have emerged as the new money-form, the universal means for deciding the price of money. The absence of fundamental value or measure – even of a nominal kind – is a given in today's financial markets. There is no final determination to the value of value. No equivalence across borders. No market equilibrium. Nevertheless, money circulates. The derivative, then, can be defined as the instrument that allows for the continuity of circulation in and across immeasurable difference. What is at stake in the circulation of capital today is not so much the exchange of equivalents as the universal transmutability of fluctuation. It is the event of turbulence itself that becomes tradable, even when its parameters are unknowable in advance. In both cases, a reduction is involved. Where commodity exchange reduces the world to a mass of standardized, qualitatively indifferent exchange values, what the market in derivatives extracts from the noise and colour of the world are its event-making relations. The turbulence engendered by connectedness. Turbulence is the event

emerging from an irresolvable relation between two or more 'flows' that are themselves relations. 'Derivatives are monetized relations of the relations of capital' (Lee and LiPuma 2004, 86). Thus the derivative contract might respond to the relation between two currencies, whose value is always fluctuating, or it might respond to the relation between exchange rates themselves (the relations of relations), or between kinds of relations, floating and fixed (as in the swap contract).

Up until the 80s, standard economic accounts described derivatives as peripheral effects of cash or spot markets, as if the price of 'derivatives' was literally derived from the prices of the latter. The derivative was therefore assumed to represent (in the case of risk hedging) or mis-represent (when it is used for speculative purposes) a fundamental value determined in the spot market and ultimately in the exchange of storable commodities. However, the rise in financial derivatives such as swaps makes it increasingly difficult to maintain the standard account of price determination and causality. The derivative-market trades in events pertaining to the money markets themselves, and in the process inevitably *occasions* events of its own making. The event-making powers of the derivatives market can be most strikingly illustrated by in the emerging market crises of the 90s. The devaluation of the Thai baht in 1997 has been described by economist Michel Aglietta as a third generation crisis in that it was generated entirely by the movement of derivatives trading within the financial markets (2001, 61). Hedge funds, anticipating that the currency was about to devalue – or rather anticipating that other investors would anticipate the same thing – moved out of the currency and into the dollar. The leverage commanded by derivatives traders such as hedge funds is so vast that they are able to produce the exchange rate valuation they wager on, transforming the wager into a self-fulfilling prophecy. Market-related events have become so endemic to the workings of capitalist relations today that it is no longer possible, if it ever were, to dismiss them as a surface effect of underlying or real economic forces. Far from being restricted to the space of the market itself, financial events reverberate outward, redetermining relationships amongst the commodities and stocks they are assumed to derive from (B and R 63). Indeed as Bryan and Rafferty argue, it has become apparent that in most

cases, not only prices in cash and commodities markets but also in financial markets specializing in stock, interest rate and currencies, are now subject to the extreme vicissitudes of derivatives trading rather than the other way around (B and R 2006, 63).

Derivatives raise urgent questions about the nature of appropriation today. How do we characterize the power relationships engendered by contemporary forms of capitalism given that derivatives have an extremely tenuous relationship to ownership as we traditionally conceive it? Bryan and Rafferty comment that unlike traditional concepts of capital, derivatives are exchanged without any change in ownership of the assets or shares to which they are indexed. Admittedly the relationship between capital and ownership is itself a difficult one to resolve, since all forms of capital seem to abstract from the understanding of property as a simple ownership of substance (whether this be the quantitative substance of the commodity and the value stored in it or the labour-force of the worker). Where traditional forms of property involve ownership of corporate assets and stocks involve ownership of a share in a company's profits, derivatives seem to move to an even higher level of abstraction, since what is being traded is a claim over volatility in the price of shares themselves. But does this mean that the category of appropriation itself becomes irrelevant when thinking about derivatives, or does it indicate that we need to rethink appropriation in wholly new terms? The contemporary dynamics of capital markets, I would suggest, calls for an understanding of appropriation in terms of the event and its relations rather than substance and stored value. The highly abstracted, integrated form of financial capital that is embodied in derivatives trading doesn't abolish the category of appropriation but refashions it, in very Heideggerian terms, *as an appropriation in and of the event*.[4] In the era of capital market liberalization, political and economic power lies in the art of leveraging the event, of turning the catastrophe-event into a source of proliferating returns. While former modes of property-right are not abolished, the appropriation of the event ascends to a leading role in the hierarchy of power relations, cutting up, subsuming and recombining the risks associated with the most abstract of economic and social relations. Derivatives can be defined as the most abstract

form of capital, since they completely abstract from the qualitative and quantitative substance of commodities, labour and shares. The leveragable event can be of any kind – financial, political or biospheric – or an abstract combination of the risks associated with these. Yet while derivatives abstract from the substantive nature of things and forces, they simultaneously operate at the most intimate of material levels, investing the transversal relations that connect and combine the entire world of priceable risk. Thus, even as it animates relations and generates turbulence at the most abstract of levels, derivatives trading also constantly re-determines the price of labour and reshapes the geographies of urban infrastructure in line with its own demands for valorization, filtering down through the levels of abstraction to make a claim over the relations, connections and networks whose futures they trade in. The power of leverage is one of potentiation through connection, the power to connect and disconnect ‚services', to potentialize and depotentialize connections, and thus to reshape the possibilities of movement of everyday life. This is a form of appropriation that operates in the future subjunctive, since the promise of leverage is a claim over the future in all its unknowability -- a claim over futures that may materialize in any place and any time.[5]

The politics of event-based capitalism – and its contestation – is therefore readable at the level of infrastructure, movement and urban life. In what follows, I will look at the recent history of American urbanism, to explore how the privatization of infrastructure and the trading of its ‚accidents has demanded a new understanding of domestic security, urban vulnerability and crisis response.

Infrastructure and Event

Tracing as it does the pre-history of New Deal and welfare state, Foucault's seminar work seems to look forward to the redistributive ideals of 20th century urbanism, with its focus on state-controlled infrastructure networks, utilities and essential public services. A number of key moments in the creation of a New Deal urban infrastructure can be singled out here – the

official declaration, for example, that airwaves were a ‚public good'; the creation of a centralized, federal department, the FCC, for regulating and consolidating all communications in the ‚public interest'; the establishment of the Federal Energy Regulatory Commission (FERC, now within the DOE) charged with monitoring the transmission of natural gas, oil and electricity between states; and the Public Utility Holding Company Act (PUHCA) designed to counter accounting fraud amongst energy holding companies) (Prins 1999, 125). But perhaps the clearest indication of this particular kind of urbanism can be discerned in the gradual development of a federal disaster response capacity (Moss 1999). After several moves to centralize disaster relief and reconstruction during the 30s and 40s, the Disaster Relief act of 1950 committed the federal government to a permanent role in disaster response. The law created a permanent federal relief fund, to be distributed to states when required, and invested the President with discretionary powers to decide what consituted a disaster eligible for federal aid. While private organizations such as the Red Cross continued to manage the distribution of relief to private citizens, the federal government assumed sole responsibility for the repair and maintenance of public works such as flood defenses, water sanitation, power lines and transport infrastructures. Federal involvement continued to expand over the following decades, to the point that by the mid 1960s the distribution of public and private roles in disaster relief had dramatically reversed and federal expenditure on disasters was many times greater than that of the Red Cross (Moss 1999, 315) The high point of US national disaster response was reached in the following decade. In 1970, Congress passed the Disaster Relief Act which covered private and public losses, extended funding to include the permanent repair of an even wider range of urban infrastructures, and compensation for disaster victims (Moss 1999, 317). And in 1978, President Carter established the Federal Emergency Management Agency (FEMA) to coordinate disaster response programmes across government agencies.

It is striking that the high-point of disaster-response in the United States can be dated from as late as the 1970s and that this high-point coincided almost immediately with calls to roll-back the welfare-functions of the state. Urban theorists such as Stephen Graham, Simon

Marvin and Neil Smith, have remarked that something quite profound is happening in the world of urban infrastructure today. Under pressure from international organizations as diverse as the World Bank and the UN Development Programme, urban infrastructures that sustain and connect the metropolitan centres – water and sanitation, telecommunications, transport, energy – are being gradually opened up to private sector involvement of one form or another. Here I would like to go further and suggest that the process of neo-liberal urbanism involves not only a privatization of urban infrastructure but a progressive abolition of the structural boundaries of the New Deal city itself. The contemporary discourse of sustainable urbanism suggests that the critical infrastructures of urban life are not so much infra as transversal to the boundaries of the city. Urban life is sustained and continuously regenerated by a whole spectrum of ‚ecosystems services whose value only becomes visible in periods of crisis. Ecological phenomena formerly relegated to the outside of the city are now discursively, politically and economically enfolded within the discourse on ecosystems services which are in turn treated as infrastructural problems on a par with any other. Enumerating the ecological services on which we depend – from wetland mitigation to irrigation and ‚precipitation events – environmental scientists argue that such services are as essential to urban life as the more familiar kinds of infrastructure and should therefore be monetized, privatized and traded as environmental credits (Ruhl, Kraft and Lant 2007). In the process, it is the very ‚eventalness‘ of the ecosystem that is incorporated into the purview of economic calculus, transforming climate change into a political problematic at the interface of the urban and the biospheric. At the same time, and as suggested by Foucault's linking of infrastructure and event, the decline of the social state model of urban infrastructure has called for a new understanding of the 'evental' and a new politics of risk management. It seems that we are moving away from a state actuarial model in which the government agrees to underwrite the collective risks of urban life toward a denationalised-speculative model in which infra-structural risk is transferred onto the capital markets, or to use the technical term 'securitized'. Unlike its social state predecessor, the state neoliberal state concedes – and therefore confirms – that risk borne by the ‚public‘ can no longer be underwritten, that it is

incalculable, immeasurable and therefore uninsurable (which is not to say that it refuses to underwrite the risks borne by investment banks!).

All of these developments have led to important shifts in the 'space-time' of urban life and the prevailing discourse on crisis. Where infrastructure was once considered a bulwark against danger coming from the outside, infrastructure is now conceived as a danger unto itself, a source of constant vulnerabilities, accidents and self-generated risks. In the US, the privatization of infrastructure networks has gone hand in hand with a politics of sustained neglect in the repair and maintenance of services, the increasing visible consequences of which are then invoked as an argument for the very necessity of public divestiture. When even the most conservative of risk-management specialists attribute this state of decrepitude to the process of privatization, which fails to provide any commercial incentives for infrastructure maintenance and repair, it is not surprising that the discourse on *critical infrastructure protection* has become a major component of US domestic security politics. The defense of critical infrastructure as an area of government interest began to crystallize with the President's Commission on Critical Infrastructure Protection (PCCIP) in 1996, which defined critical infrastructure as national infrastructures so vital that their ‚incapacity or destruction would have a debilitating effect on the defense or economic security of the United States". The specific infrastructures highlighted were „telecommunications, electrical power systems, gas and oil storage and transportation, banking and finance, transportation, water supply systems, emergency services (including medical, police, fire and rescue) and continuity of government' (Lopez 2006, 39).[6] Collier and Lakoff liken this discourse to earlier strategies of infrastructure protection adopted as part of the Cold War civil defense program (2008). However, important distinctions need to be made: while these Cold War strategies were specifically interested in defending key industrial and military facilities, the recent discourse on Critical Infrastructure Protection refers also to infrastructures previously integrated within the vital or welfare functions of the New Deal State. Moreover it no longer relegates danger to the punctual, catastrophic threat coming from outside the nation state or its urban centres (the natural disaster or atom bomb) but focuses on the cascading accidents

endogenous to networks themselves. These networks traverse and sustain the nation-state but no longer belong to it. The dangers they transport are numerous and different in kind – financial contagions, extreme weather, infectious disease, computer viruses – but share the common feature of originating from within the very sinews of circulation. The privatization of infrastructure and deregulation of capital markets which made it possible to trade infrastrucuture risks in global financial markets are here understood as both integral to national security but also generative of the very risks against which the nation must prepare itself.

The institutional transformation of emergency response in the United States should be read not so much as a response to the risks generated by infrastructure privatization as a continuation of the same logic. The so-called force transformation of the US defense forces has thus seen a thorough-going restructuring of the overseas armed forces involving privatization, outsourcing and the growing influence of institutional investment funds (Martin 2007), (Mampaey and Serfati 2004). The Bush administration turned the process inward, adapting the same strategies to domestic crisis-response organizations such as FEMA, while incorporating it under the larger umbrella of national security**.** When FEMA was placed under the new DHS in 2002, it suffered large cuts in grants for natural disaster preparedness, with the focus shifting from natural risks to counter-terrorism. Until then, FEMA had only been marginally engaged in the Cold War preparations for civil defense. When merged with DHS, FEMA's disaster mitigation funds were halved while three out of four mitigation grants were now rerouted to counter-terrorism, most of this money going to private businesses who dominate the burgeoning private security sector (Perrow 2007, 108-114). At the same time, the Bush administration tried to devolve responsibility for disaster mitigation to states, who were already suffering from heavy budget deficits. Here again, notes Perrow, there has been a marked focus on counter-terrorism at the expense of natural disaster response. Hurricane Katrina is often cited as the apogee of Bush's incompetence– the indefensible outcome of neglect and corruption rather than long-term strategy. Yet the post-catastrophe assessment report published by the White House in 2006 approaches it as a tentative experiment, whose

very failures suggest the necessity of a ‚continuous transformation' of crisis response (2006, 82). Thus the report titled *Hurricane Katrina: Lessons Learned* argues from the manifest failure of federal preparedness and evacuation procedures in New Orleans that ‚it is unrealistic' to expect the government to respond effectively to the challenges of catastrophic risk in the 21st century (52). The fact that military forces – both the National Guard and active duty forces – needed to be deployed in New Orleans *faute de mieux* is invoked as a reason for permanently incorporating their capabilities into a national response plan. Tthe report is critical only of the limitations under Federal Law that seek to circumscribe DOD intervention to explicit requests for assistance (54) and calls for the further incorporation of private security firms, relief operations and faith-based services and reconstruction firms into the business of crisis-response. Particularly revealing about the political complicities between infrastructure privatization and the new security discourse is a passage in which the report considers the problem of critical infrastructure protection: in the wake of a natural disaster, private infrastructure services can be forcibly or inadvertently opened up to public use, so that a major security problem is how to defend the ‚critical nodes of urban infrastructure' against the danger of lawless connection.

Moving without comment from war to financial crisis to natural disaster, the 2007 report of the Department of Homeland Security offers an assessment of risk that is becoming increasingly familiar across disciplines, institutions and doctrines, from scenario planning in business and environmental science to US strategic doctrine. 'We are a Nation at war, and we have a responsibility to be prepared. We must temper our optimism with certainty of future catastrophes. We cannot prevent natural disasters. […] Our Culture of Preparedness, therefore, must emphasize the importance of flexibility and readiness to cope with an uncertain future. While we cannot predict the future to our satisfaction, we can build capabilities that prepare us for a broad range of challenges. Perhaps equally important, we can ensure that our preparedness plans, thinking and ‚imagination' do not become so rigid that we cannot readily adapt to unforeseen challenges' (Homeland Security Council 2007, 79). What does this culture of preparedness demand? Not so much post-catastrophe reconstruction

or the restoration of urban space as *resilience* and *regeneration.* Increasingly invoked in urbanism and disaster planning and borrowed from ecosystems science, the term ‚resilience' , evokes the ability to survive catastrophic events through flexible transformation (Gunderson, Holling, Pritchard, Peterson 2002). The call to resilience is both a psychological call to arms – where what counts is our emotional resilience to the unexpected – but also a vision of urban planning. The discourse of preparedness replaces the short-term relief effort – with its aim to restore the status quo ante – with a call to permanent urban regeneration (adapting to disequilibrium). It understands the catastrophe event as an opportunity for the selective transformation of cities and communities. Indeed it goes so far as to imagine urbanism itself as a process of continuous regeneration in and through catastrophe.

Post-Developmental Urbanism – Urbanism, Crisis Relief and Water Infrastructure

The transformation of urbanism and emergency response in the metropolitan centres of America reflects a strategy that has been simultaneously carried out in the developing world, where foreign aid grants and international bank lending are now routinely linked to the privatization of services and infrastructure. The case of water is exemplary here. Major international agencies that have promoted public-private partnerships in water services in the developing countries include USAID, the World Health Organization, the Water Supply and Sanitation Collaborative Council, the Development Bank of Southern Africa, the European Investment Bank. Most influential of all, perhaps, has been the World Bank/UNDP alliance, which teamed up to create UN-Habitat, the UN's urban management programme, which heavily promotes private sector involvement in services (McDonald and Ruiters 2005, 13-42). The term , privatization' covers a broad range of ‚public-private partnerships – in a few cases, this involves outright privatization of material infrastructure networks and their services, but in most cases a more limited form of divestiture has occurred, with the state retaining responsibility for the maintenance and upgrading of the networks, while private companies engage in metering, billing and other services; ‚privatization' also stands in for the

‚corporatization', when public utitlities remain in the hands of the state but are reorganized along the lines of commercial management. The privatization of water has been pursued intensively in Latin America, Asia and Southern Africa. It has initiated an intensive process of mergers and acquisitions in and across ‚infrastructure services, with the large multinational service companies such as Bechtel, Suez, Vivendi and RWE Thames now operating on an international but often highly selective scale. More often than not these companies provide services on a short-term basis to the wealthier areas of cities, demand high public subsidies and only locate in areas where infrastructure is already in a high state of repair.

The privatization of urban infrastructures in the developing world is closely linked to the transformations that have occurred in the very concept of developmentalism and foreign aid over the same decades. In his exploration of the changing face of foreign aid, Mark Duffield has commented how humanitarian organizations have moved from a focus on industrial and infrastructural funding to one of sustained post-crisis intervention (2007). In this post-developmental world, more funds are allocated to emergency relief efforts than industrial development, public work projects and urban infrastructure. Indeed it might be noted that the prevailing discourse of humanitarian intervention – formulated in the UN's discourse on human security and complex emergency – points to the breakdown of infrastructure and the seeming demise of the industrial, modernized, third world state as the very pretext for its post-catastrophe interventions. What is left unanalyzed in these accounts is the question of the link between financial liberalization, infrastructure privatization and vulnerability to financial and natural disasters. Assuming the failure of a modernist urbanism to be a fait accompli, the very organization that promote infrastructure privatization (such as UN-Habitat) are tightly associated with the organizations (the UNDP) who define infrastructure degradation as the sign of a ‚failed state', a ‚complex humanitarian emergency' and a pretext for military intervention. If humanitarianism is becoming a form of permanent emergency relief, as Duffield has suggested, then permanent catastrophe is becoming the default condition of third world urbanism.

Increasingly too, the alliance between an erstwhile humanitarian politics and the

urbanism of catastrophe is further complicated by the link being made between water resources and climate change. The IPCC (Intergovernmental Panel on Climate Change) offers a number of scenarios about the future of precipitation as a consequence of climate change. Each of these scenarios point to an increase in the variability and intensity of rainfall. It is forecast that the distribution of precipitation events will change, although their precise timing and location is not predictable. Of course these forecasts do not immediately translate as a situation of crisis – much less scarcity – since the changes identified point to a redistribution of water rather than an overall limitation. What counts here is the political response to changes in water precipitation and temperature. Nonetheless the forecasts offered by such conservative policy institutes as the World Water Counctil and the CSIS (Center for Strategic and International Studies) and Global Business Network (a consulting group associated with Royal Dutch Shell) do routinely conflate the fact of climate change with the certainty of scarcity. Moreover, they predict that conflicts around water will present one of the major strategic challenges of the 21st century and should therefore be considered a US national security issue. The logic is a circular one – since water will be scarce, we can no longer afford to distribute it as a public resource. Public water infrastructure needs to be privatized, which will guarantee that it is priced above its presently minimal cost, which will in turn generate the scarcity required for making a profit. It is however, conceded that the privatization of water is likely to generate intense political conflict, which in turn calls for a redefinition of water resources in security terms, *as critical infrastructure which needs to be defended from those who would connect to it for free.*

With their attentiveness to volatility of the future, these approaches are nevertheless invested in one remaining certainty. The precipitation event, wherever and whenever it materializes, will have been appropriated, its effects channeled down the routes of privatized infrastructure and ‚secured' against the lawless connections of those who would connect and potentiate for free. Of course the relationship works both ways, since resistance to water privatization constitutes one of the most intensive sites of counter-urban politics today. Whether they assume the spectacular form of urban riots or consist in everyday acts of

sabotage such as illegal connections and tampering with water meters, such tactics represent a significant threat to the politics of privatized water, since they attack the critical nodes that leverage a much larger network of ecological and social relations. By re-connecting to flows of water that were once in the public domain, they undermine the future subjunctive form of capitalist appropriation – the form that promises itself that the event of precipitation will have been appropriated, wherever and whenever it occurs.

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[1] In this respect, I differ from Lee and LiPuma and Maurer, who argue that the specificity of derivatives as a money-form lies in their pertaining to risk rather than commodities or labour. All money-forms can be defined according to a particular risk-relationship. What is pertinent here is the nature of the risk at stake in the trading of derivatives. Properly speaking the future to which a derivative refers designates an unpredictable or incalculable risk and therefore is no longer a risk per se. Rather it is an event. Far from precluding a consideration of labour, this requires a rethinking of the politics of labour exploitation in terms of risk exposure and experiment. See my paper on Experimental Labour.

[2] '[Derivatives] turn *the contestability* of fundamental value into a tradable commodity. In so doing, they provide a market benchmark for an unknowable value' (Bryan and Rafferty 2006, 37). Contrast this statement with Lee and LiPuma, who are always pining after the loss of 'fundamental values' which they locate, not incidentally, in the realm of culture, morals and religion.

[3] Although a derivatives contract does not involve an explicit borrowing of money, the effect of borrowing is implicit in the contract itself which is effectively a debt.

[4] The question of the relationship of Heidegger's philosophy to the financial crisis of the 30s has yet to be explored in full detail. However, there is ample evidence that his reflections on the ‚free-floating speculation' of the Weimar Republic are inspired by his perception of both rampant financial speculation and cultural decadence. The fact that Heidegger's ‚solution' involved both a control of capital markets and open support for the Nazi state gives pause for reflection on the complicitities of ‚neo-liberal' and ‚neo-conservative' tendencies in the US polity today.

[5] This question of the temporality of appropriation needs to be expanded. However, it finds a tentative articulation in speculative futures methodologies such as scenario planning. Developed by Royal Dutch Shell and conservative strategist Hermann Kahn at the Hudson Institute, scenario planning is a forecasting-method that attempts to imagine the least predictable and most unexpected of events and to incorporate these contingencies into present-day planning. Bringing imagination into the very heart of decision-making, scenario planning formulates a series of propositions that take into account both our wishfulness in relation to the future and the recursive effects of this wishfulness on the present. This is an understanding of the proposition that has much in common with the empiricist philosophy of counterfactuals and possible worlds. See Aligica (2004; 2005). In the English language, the logic of counterfactuals is best exemplified in certain kinds of conditional propositions or perhaps in the less obvious grammatical form of the English subjunctive. Some commentators refer to scenario planning as a futures methodology working in the ‚future subjunctive'. The Oxford English Dictionary refers to the subjunctive as a tense ‚designating a mood'; its'forms' can be , employed to denote an action or a state as conceived (and not as a fact) and [are] therefore used to express a wish, command, exhortation, or a contingent, hypothetical or prospective event' (Oxford English Dictionary). See also Richard Polt (2006) on the use of the future subjunctive in Heidegger's philosophy of event-appropriation.

[6] In 2001, the Office of Homeland Security was established in the White House. Soon after, EO 13231, ‚Critical Infrastructure Protection in the Information Age' includes telecommunications, energy, financial services, manufacturing, water, transportation, health care, and emergency services sectors. For detailed studies of the rise of a Critical Infrastructure Protection discourse during the mid-nineties, see Lopez (2006) and Laporte (2006)