

Fire and Ice: Unnatural Disasters and the Disposable Urban Poor in Post-Apartheid Johannesburg

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Abstract

Johannesburg is a divided city where propertied middle-class residents and the urban poor live in existentially separate worlds. If the steady accretion of luxury entertainment sites, enclosed shopping malls and gated residential communities in the northern suburbs has come to symbolize the entry of middle-class urbanites into the culture of aspirant 'world class' cities, then the proliferation of overcrowded, resource-starved informal settlements on the periurban fringe represents the dystopian features of distressed urbanism. The risk-prone environments of informal squatter settlements magnify the impact of catastrophic events like fires and floods, and the intersection of disaster-vulnerable settlement patterns with relaxed planning regulations and building standards, lack of preparation for unsuspected calamities, and inadequate crisis management creates entirely new artificial hazards. These unnatural disasters cannot simply be attributed to 'bad luck' or nature's destructive force. Disaster-vulnerability and exposure to risk are unevenly distributed across the metropolis. By focusing attention on the catastrophic fires that regularly destroy shanty settlements in places like Alexandra township at the northeast corner of Johannesburg, it is possible to reveal a largely hidden structure of marginality and social insecurity that is a permanent condition of everyday life for the urban poor.

Fire and ice have South Africa in their grip. . . . People were burnt to death, or they were freezing (Nandi Ngcobo)¹

Like all physical occurrences, the devastating fire that swept through one of the many shack settlements in Alexandra township at the northeast corner of Johannesburg on 9 September 2003 was a singular event. It began in the early morning when an apparently distracted woman living in a dilapidated shack at the corner of Fifth Avenue and London Road accidentally overturned a cooking-stove upon which she had been frying eggs for breakfast. After failing to promptly douse the flames with water, the frightened woman fled in terror. The small blaze quickly turned into a ferocious firestorm that burned out of control for three hours. As the raging inferno spread rapidly through the tightly-packed warren of makeshift dwellings, pandemonium reigned supreme. While panicked parents sought to locate their children who were on the way to school, others risked their lives

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1 Nandi Ngcobo, Fire and Ice Have SA in Killer Grip, *The Star*, 19 July 2000.

in a heroic effort to rescue those trapped in the blaze. As high winds fanned the flames, a desperate few managed to drag their meager household belongings away from the fire's path. Firefighters summoned to the scene battled the towering flames, some more than five meters high. Plumes of black, acrid smoke billowed skyward, filling the air with soot and ash and plunging the township into an eerie daytime darkness.²

What severely hampered the efforts of firefighters was the spatial agglomeration of the squatter encampments: tiny shacks arranged cheek-by-jowl, sometimes built precariously one on top of the other, laid out along narrow, meandering footpaths. Firefighters tried in vain to slow the advance of the raging conflagration. But because they were unable to reach the source of the blaze, they were forced to scramble across the flimsy rooftops of burning shacks, fighting the flames as best they could from these risky and dangerous positions. Time and again, the blast-furnace heat of the blaze drove firefighters and hastily mobilized bucket-brigades of local volunteers into hasty retreat. Before the fire was fully contained, it had reduced some 300 makeshift shacks to smouldering ruins, leaving more than 600 people homeless and virtually destitute. Miraculously, emergency crews reported no fatalities.³

With their shacks destroyed, disconsolate residents of the burned-out squatter settlement gathered up the few items that they had managed to save and placed them in haphazard piles on to the street. If those who were rendered homeless by the fire had not suffered enough, what made the situation even worse was that they were forced to stay alert in order to prevent looters from stealing their remaining possessions. Because the municipal authorities regarded them as illegal squatters, the homeless victims of the fire were unable to call upon municipal social service agencies for assistance in finding alternative accommodation and in obtaining funds for rebuilding their modest homes.⁴

Faced with the grim task of putting their lives back in order, angry victims of the fire blamed Johannesburg fire services for their ill-preparedness and their inadequate response to the catastrophe. Facts on the ground provide ample justification for their bitterness. The lone Alexandra fire station is located less than two minutes away from the place where the blaze started, but the four firefighters (three of whom were volunteers) who initially responded to the call were unable to start their only water-tanker because it had a dead battery. Besides, of the 18 firefighters assigned to the station only one was authorized to operate the water tanker — and he was off-duty at the time of the fire. The one fire hydrant nearest the burning shacks on London Road was rusty and broken. In the critical 20 minutes waiting for the arrival of a single fire engine, the blaze spread out of control. The tanker truck that eventually reached the scene quickly ran out of water.⁵

Meanwhile, across the N1 highway in nearby Sandton, middle-class residents who were able to catch a glimpse of the ongoing tragedy conjured up apocalyptic images of the whole of Alexandra township — with its estimated 350,000 residents tightly packed into an estimated 4,000 formal houses and 34,000 self-built shacks — disappearing in flames.⁶ As nervous suburbanites anxiously watched the darkening skies from the safety of their stately mansions, many must have secretly hoped that the winds would blow the

2 Information is taken from Solly Maphumulo, Toppled Stove Leaves Hundreds Homeless, *The Star*, 10 September 2003.

3 Information is taken from Solly Maphumulo, Toppled Stove Leaves Hundreds Homeless, *The Star*, 10 September 2003. See also Anna Cox and Themba wa Sepotokele, Shack Fires Leave Two Dead, 300 Homeless, *The Star*, 3 September 2000.

4 Solly Maphumulo, Toppled Stove Leaves Hundreds Homeless, *The Star*, 10 September 2003.

5 Thuli Nhlapo, Alexandra Fire Station Paralysed, *The Star*, 11 September 2003.

6 With its severe overcrowding, dilapidated infrastructure, stifling air pollution, rampant crime and high unemployment (estimated at 60% of the economically active population), Alexandra is one of the worse urban slums in the Greater Johannesburg region. Nicknamed the 'Dark City' because the lack of electricity shrouds the place in virtual darkness after nightfall, the township has long served as the dystopian antipode to the affluent suburbs located nearby. See Anti-Privatisation Forum (APF), 'Dark City' to be Rebuilt, *Mail & Guardian*, 25 February 2001; and Victor Khupiso, After 100 Years, Alex Gets Police, *Sunday Times*, 9 March 2003.

smoke-filled clouds somewhere other than over their posh neighbourhoods with their private swimming pools, verdant gardens, and carefully manicured tennis courts.⁷

Social maladies masquerading as natural disasters

For middle-class urban residents who learned about the catastrophic fire in Alexandra from television coverage and eyewitness newspaper accounts, the unfolding drama of shack-dwellers uprooted from their burned-out shanties may have seemed extraordinary, and perhaps even surreal. What is unusual, however, about this particular tragic event is not its devastating consequences, but simply that the hardships of its hapless victims were rendered *visible* for all to see — an undeniable fact of human suffering. While shack-fires are common everyday occurrences in the informal settlements and shantytowns that ring the Greater Johannesburg metropolitan region, most go largely unnoticed and unrecorded, and hence are excluded from public consciousness. Yet every once in a while a great firestorm surges uncontrollably through a shack settlement with such ferocity and devastating consequences that it simply cannot be ignored. As newsworthy events, these disastrous episodes suddenly expose the plight of the ‘poorest of the poor’, whose everyday existence is largely hidden from ordinary middle-class lines of sight, to the glare of public scrutiny. They reveal the ironies and contradictions of a post-apartheid revitalization strategy weighted in favour of establishing Johannesburg as a ‘world-class’ city while at the same time largely overlooking the immediate needs of the jobless urban poor who lack adequate housing, basic infrastructure and requisite social services. The tragic events also peel away the surface-veneer of luxurious, First-World, cosmopolitan urban living that exuberant city-boosters never tire of stressing to reveal a grim, dark underside of urban marginality rooted in enduring social inequalities and constricted opportunities. Despite formal equalities as rights-bearing citizens in post-apartheid South Africa, the continuing impact of spatially uneven geographies of exposure to environmental risk and vulnerability to hazards is a telling reminder that the promise of upliftment for the ‘poorest of the poor’ following the demise of apartheid has so far failed to materialize (Wisner, 1995a; 1995b; Graham, 2005).

If the risk-prone physical environments where the urban poor find temporary refuge intensify the impact of catastrophic events like fires, floods and bitter cold, then the intersection of disaster-vulnerable residential settlement patterns with relaxed planning regulations and building standards, lack of preparation for unsuspected calamities, and inadequate crisis management create entirely new artificial hazards (Davis, 2005: 128; see also Hewett, 1983; 1997; Wisner, 2001; Blaikie *et al.*, 2004). In the Greater Johannesburg metropolitan region, the rootless poor who do not have access to formal housing accommodation have little choice but to seek shelter in informal squatter settlements that are routinely subjected to the devastating effects of raging fires, torrential rains, freezing cold, stifling heat and overflowing waterways. Yet, like all social phenomena, fire-events do not ‘speak for themselves’, that is, the fact of their occurrence does not yield ready-made understandings of how and why they happened and what they mean. Depending upon who is trying to make sense of them and for what purpose, shack fires are enframed within different systems of intelligibility and subjected to multiple layers of judgment and interpretation. As a growing number of scholars writing on extreme weather events have demonstrated (Mustafa, 2005: 566–69; see also Klinenberg, 2002; Braun and McCarthy, 2005; Colten, 2005; Calhoun 2006), the ways in which technical experts, policy-makers, observers and even victims themselves frame, code and discuss such tragic occurrences strongly influence how they are understood. Talk about

7 Information is taken from Solly Maphumulo, Toppled Stove Leaves Hundreds Homeless, *The Star*, 10 September 2003.

urban hazards, exposure to risks and vulnerabilities enters into public discourse already laden with value-orientations, normative judgments, and institutional biases (Mustafa 2005: 566; see also Klinenberg, 2001).

Because shack fires and extreme weather events take place so suddenly and without warning, perhaps it is not surprising that they may appear incomprehensible and inexplicable — fortuitous, improbable occurrences that reflect the unfortunate frailty of the human condition in the face of the haphazard whims of nature (Mbembe and Roitman, 1995: 338; Klinenberg, 2002: 15).⁸ To the extent that such traumatic events are typically lived as an abrupt experience of unmitigated disaster, it is often the case that victims and observers alike attribute their devastating impact to sheer accident or ‘bad luck’ — Ted Steinberg (2000) uses the term ‘Acts of God’. Yet the disastrous effects of these raging fires that routinely wreak havoc on informal squatter settlements are never simply the result of unscheduled happenstance or unpredictable ‘Mother Nature’ on a rampage, and the deaths and injuries that accompany these urban catastrophes cannot be attributed solely to chance, completely separated from the material geographies of vulnerability unevenly spread across the metropolitan landscape.

When looked at as singular, isolated and time-bound episodes that signal the unannounced onset of immediate crisis, such extreme events yield only limited understanding of their real significance as unnatural disasters. To the extent that media representations, official pronouncements and public discourse typically frame the devastating effects of shack-fires as the unfortunate outcome of circumstances where the unlucky victims happened to be in the ‘wrong place at the wrong time’, they tend to ‘naturalize’ what are not so much singular events as a permanent condition of existence for those who inevitably find themselves in harm’s way. Rather than clarifying the linkages between seemingly disconnected episodes, focusing attention on particular incidents of tragedy and human suffering tends to obfuscate the social nature of artificial hazards, that is, the underlying structural conditions that make such social catastrophes inevitable in the first place (Wisner, 1995a; 1995b; Steinberg, 2000).

Following from what Eric Klinenberg (2001:122–3) suggested in his study of the 1995 Chicago heat wave, narrowing the scope of attention to the spectacle of destruction, death and human suffering that accompanies individual fire-events serves to promote a double distraction: first, placing a great deal of stress on uncovering the immediate or proximate causes for outbreaks of devastating fires — human error, negligence, or the carelessness of the squatters themselves — tends to ignore the largely unacknowledged connection between the spatial geography of vulnerability and the everyday ecology of inequality; second, treating particular episodes of human tragedy as singular, extraordinary events directs attention away from seeing the connections between events as visible symptoms of long-term structural patterns of disaster-vulnerability. By focusing almost exclusively on immediate experience of hardship and human suffering, the public discourse that accompanies these fire-events confers a kind of figurative meaning on them as ‘horrible mistakes’ or unfortunate accidents that ignores the underlying structural determinants of unequal vulnerability to disaster. Yet, like flooding along waterways and the freezing cold of winter nights, incendiary disaster is an integral part of the calculus of everyday life for the poor. To the extent that fire-events are fashioned as discrete, time-bound, out-of-the-ordinary episodes disconnected from the wider social fields within which they take place, they yield only a partial understanding of causation and culpability. However, when these disastrous occurrences are viewed as chains of concatenated events that congeal into regular patterns, recognized trends and recurrent frequencies, then they yield an entirely different meaning: when they are seen as aggregated ‘social facts’, it becomes possible to conceive that what appear as random

8 I frame the beginning of my analysis in a way that mirrors the approach pioneered by Eric Klinenberg (1999; 2001; 2002) in his ‘social autopsy’ of the summer heat wave that left scores of people dead in Chicago in July 1995.

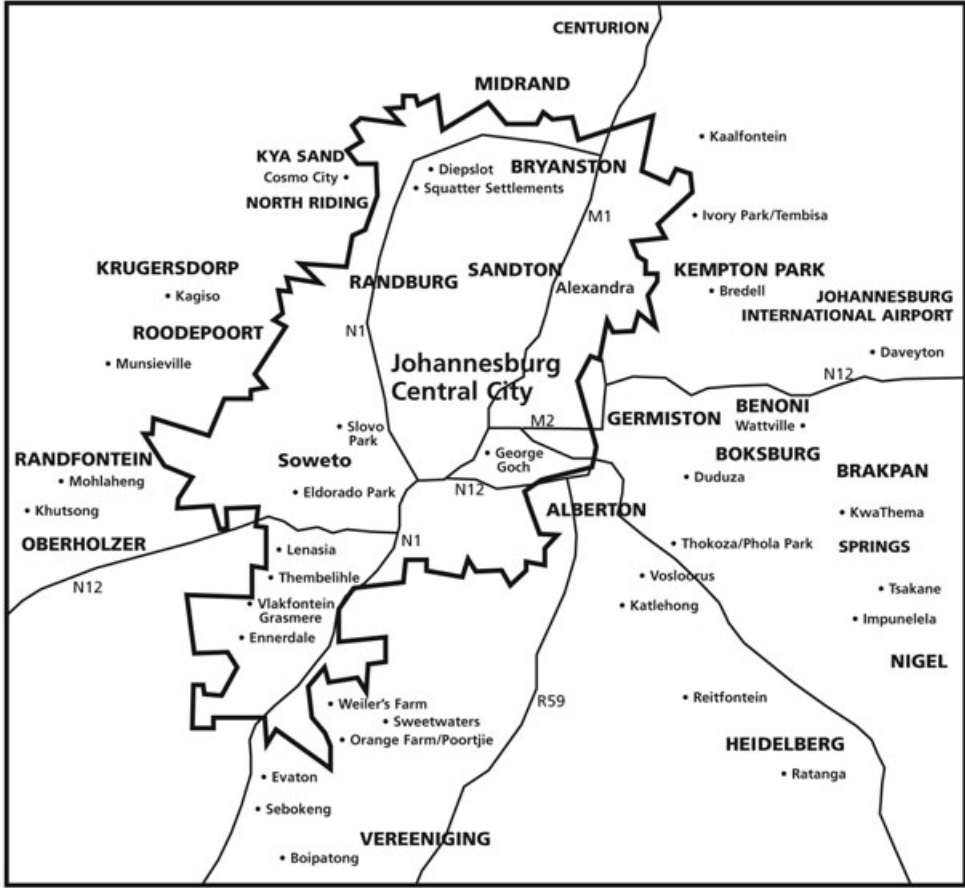
(and hence inexplicable) natural disasters are actually recurrent (and hence preventable) social catastrophes.⁹

By taking a holistic view of these tragic events (including a catalogue of the human toll as indicated by deaths and serious injuries), it is possible to reveal a largely hidden structure of urban marginality and social insecurity that constitutes a permanent condition of everyday life for the urban poor, but is otherwise difficult to detect (Klinenberg, 2001: 123). In order to grasp the social nature of these unnatural disasters, it is necessary to jump scales, that is, to move from accounting for why individual fires start to explanations for the overall patterns, trends and frequencies of fire-events taken in the aggregate. Catastrophic events associated with fire, extreme cold and flooding become unavoidable, multiple and interrelated hazards in the historical context of socially produced patterns of vulnerability (Oliver-Smith and Hoffman, 2002: 3; Mustafa, 2005: 582).

As a number of scholars have persuasively argued, social catastrophes associated with natural extremes — such as earthquakes, fires, tsunamis, floods, hurricanes and sudden weather changes (like cold or heat) — are powerful events that can expose the often hidden politics, policy-choices and asymmetrical geographies of the urban localities they devastate (Davis, 1999: 3–55; Steinberg, 2000: xix-xx; Klinenberg, 2002; Colten, 2005: 140–61). Focusing on the integral connections between specific typologies of urban land-use and differential exposure to risk enables us to grasp in a concrete way the wholesale abandonment of the urban poor who live a marginal existence in unauthorized encampments on the metropolitan fringe (see figure 1), who have invaded abandoned buildings in the central city and who sleep in public parks, on sidewalks and under bridges. Seemingly ‘extraordinary’ events like devastating fires, flooding and freezing cold can reveal not only the precarious balance between land-use patterns and the natural environment but also the stark inequalities in the spatial distribution of risk. As Mustafa (2005: 568–70) rightly observes, a great deal of conventional social science research on hazards constructs disaster-events as sudden, ‘unscheduled’ or ‘accidental’ interruptions of normal life, where an external ‘natural force’ is the key causal mechanism explaining vulnerability and exposure to risk. But this narrow technocratic understanding of hazards reflects an engineering bias that deflects attention away from the interlinked physical and social vulnerabilities that expose the urban poor not to single but to multiple risks. Because of their ongoing exposure to risk and vulnerability to hazards, the urban poor typically conduct their daily lives under a permanent state of emergency, or what Giorgio Agamben (2005) has called the ‘state of exception’. For those forced to live in this chronic state of abandonment, the crisis of everyday life finds material expression in the urban landscape: in its broken-down infrastructure, in its restricted opportunities, in its collapsing services and amenities, in its ruin and decay, and in its excess of uncertainty, violence and danger (Mbembe and Roitman, 1995: 327–8).

Seeing these fires as part of the everyday conditions of existence in the squatter settlements lays bare what amounts to the wholesale abandonment of the urban poor, cut loose from the conventional ties that bind city-dwellers to the urban fabric. Because fires occur with such regularity, it is difficult for those who experience their devastating effects to distinguish between ‘what results from mere chance, or accident, and what results from the “normal” state of affairs’ (Mbembe and Roitman, 1995: 338, 339). Shack-dwellers suffer not solely because of the sudden and unpredictable force of nature. Extreme weather events cannot be thought of independently of the social processes that reproduce a permanent state of emergency for the urban poor. The social catastrophes triggered by shack fires do not begin with the disastrous events themselves. They originate in the longstanding abandonment of the urban poor as part of the normal functioning of neoliberal urban governance, with its stress on individual initiative,

9 This distinction between (isolated) episode and (connected) event has significant methodological implications for understanding social life. For a wider discussion, see Peter Smith (1984) and Ron Aminzade (1992).



Key:
TOWNS / SUBURBS: CAPITAL LETTERS
Townships / Informal Settlements: Lower case letters

Figure 1 'Ring of Fire': townships and informal settlements surrounding Johannesburg Central City

entrepreneurship, pay-as-you-go and cost recovery. Catastrophic fire-events do not cause this abandonment; they merely bring it into the open. The real lesson which these shack-fires reveal is that the disaffiliation of the urban poor from the world of work, from decent housing, and from basic social services is a part of the normal functioning of urban governance under the hegemony of neoliberal ideologies and practices (Braun and McCarthy, 2005: 803).

The devastating effects of such extreme events as horrific shack fires are the outcome of multiple interactions of numerous processes operating across spatial scales. The spatial layout of informal settlements, the choice of highly combustible building materials, inadequate strategies for fire prevention and suppression, and exposure to risk come together to produce the objective conditions for social disaster. These objective conditions make 'accidents [seem] normal' to borrow a phrase from Charles Perrow (1999), even though the precise timing and the extent of damage brought about by these occurrences are largely unpredictable. The firestorms that periodically engulf the squatter settlements are social disasters, and their catastrophic impact owes as much to entrenched social inequalities, the spatial location of vulnerable communities and

political neglect as to the seemingly unexpected force of nature (Oliver-Smith and Hoffman, 2002, 3–4; see also Wisner, 1995a; 1995b).

Learning from urban political ecology

Investigating the devastating fires that routinely wreak havoc in the informal squatter settlements in the Greater Johannesburg metropolitan region provides a convenient avenue for engaging with new ideas emanating from the field of urban political ecology (Wisner, 1995a; 2001; Harvey, 1996; Swyngedouw, 1996; 2004; Fischer and Hajer, 1999; Gandy, 1999; 2002; Kaika and Swyngedouw, 2000; Swyngedouw and Kaika, 2000; Berry, 2001; Castree and Braun, 2001; Pelling, 2001; Keil, 2003; Swyngedouw and Heynen, 2003; Desfor and Keil, 2004; Kaika, 2005). A great deal of urban scholarship rests on the mistaken presumption that cities are the antithesis of the natural environment, rather than integrally connected with it (Gandy, 2002; Colten, 2005: 187). Conventional models of metropolitan growth typically depict urban landscapes as seemingly featureless 'isotropic plains' without significant topographic, geomorphological or hydrologic irregularities. Despite their elegance as cartographic devices, these models generally overlook or downplay how diverse settlement patterns overlap, intersect and interact with the irregular natural environment. A contrasting approach has been to look at the urban landscape as a vast, interconnected ecological system, where evolving modalities of land use have modified, reshaped and otherwise altered the hydrology, climatology, geomorphology and bio-geographic characteristics of the natural environment (Colten, 2005: 7–15, 188; see also Berry, 2001; Gandy, 1999; 2002). Rather than conceiving of urbanization as a process that inexorably displaces nature (as such celebrated urban theorists as Lewis Mumford did), it is more fruitful to explore how city-building is intimately connected with 'reworking nature' (Gandy, 2002). As Roger Keil (2003: 728) and others (Fischer and Hajer, 1999) have pointed out, one of the main insights derived from recent theorizing about urban political ecology is that the material and the symbolic, the natural and the socio-cultural, and the wilderness and the built environment are not dual and separate spheres, but rather inextricably intertwined and inseparable aspects of urban life-worlds. Always and everywhere, city-building efforts interact and overlap with natural processes, producing a synthetic hybrid that some theorists have called 'transformed nature', or 'second nature' (Cronon, 1991: 5–19; Green, 1990; Swyngedouw, 2004). It is on the urban terrain that the ongoing metabolic transformation of the natural environment becomes particularly visible, both in its physical form and its socio-ecological consequences (Swyngedouw and Heynen, 2003: 906–7; see also Keil, 2003). Seen through the prism of human–environment interaction, the urban landscape appears as a variegated mosaic of 'risk surfaces' or 'hazardscapes', involving different methods of resource extraction and waste disposal, where the real and potential threat of environmental degradation is unevenly distributed over the nodular topography of the city (Myer, 1994; Colten, 1998; 2005; Mustafa, 2005).

A number of scholars have distinguished between a materially produced 'first nature' and a socially-constructed 'second nature', thereby drawing attention to the lived reality of hazardous places. This stress on the production of a hybridized metropolis, or 'second nature', enables us to look at how the social production of urban space unevenly distributes the vulnerability to hazards, exposure to risk and ecological breakdown (Hewett, 1983; Cronon, 1991; Swyngedouw, 1999; 2004; Demeritt, 2002). Nor are the failures of urban infrastructures and inadequacy of emergency responses, which almost invariably accompany such disasters, ever really the sole result of purely 'technical' breakdowns, administrative imperfections or poor planning. Rather, as in the case of squatter fires and other catastrophes that disproportionately affect the urban poor, natural elements (earth, air, fire and water) mingle inseparably with the urban world of

sociability, exchange and interaction. It is impossible to separate the natural world from the socially constructed one of the built environment of cities, infrastructures, and technologies (Green, 1990). The built environment and the biophysical fabric of cities are made, and they function together, as an organic whole (Castree, 1995; Castree and Braun, 2001; Wisner, 2003). As a number of scholars (Cronon, 1991; Brechin, 1999: 1–9; Gandy, 2002) have shown, what takes place in cities irreparably shapes the surrounding natural environment in powerful and lasting ways: the commandeering and extraction of distant food, water and energy sources; the transport of these materials to the cities; the consumption of these materials along with the disposal of wastes. On a broader scale, the sheer physical impact of urban landscapes on the world's biosphere has fundamentally altered the balance between the inhabited and uninhabited zones of the planet (Davis, 2005).

Seen on a broad scale, these rhizomatic flows and circuits, and the cities that depend upon them, require the installation and maintenance of vast complexes of infrastructure, public works and hazard management systems to enable them to function efficiently (Gandy, 2002; Kaika, 2005). Quite literally, these constitute the 'public realm' of cities that have been historically put in place for the collective good. At root, the politics of city-building — who gets what, where, and why — is linked to the mobilization and allocation of scarce resources. Invariably, city-building efforts that aim to reshape the material form of cities in particular ways but not others, are strongly influenced by the politics of scarcity. When catastrophes occur, the skewed, unbalanced spatial distribution of scarce resources is brought into the open, often in the form of horrific visual images of human tragedy. If the 'public realm' of a city is neglected or weakened for any reason, disasters can easily reveal these deficiencies in the urban metabolism with undisguised clarity. What appears as an exceptional outcome of fortuitous circumstances is actually part-and-parcel of the general rule: breakdown inevitably occurs in those parts of cities not prepared to handle the stresses and strains that assault the biophysical fabric of the urban landscape (Gandy, 2002: 9–11; Graham, 2003).

Disaster-vulnerability and the precarious environment: the making of an unstable hazardscape on the exurban fringe of Johannesburg¹⁰

At Benrose [informal settlement], the charred remains of residents' possessions lay forlornly where fires had been lit to ward off the cold.¹¹

There is a tendency both in scholarly and popular commentary to treat the cosmopolitan sites of luxurious spectacle at the urban core and the depleted sites of degraded living at the exurban fringe as spatially distinct locations and therefore analytically separate places, more isolated and disconnected from each other than bound in a common history and a mutual dependence (see Cronon, 1991: xiv–xv; Buğra, 1998). Yet these places are inextricably tied together by hidden flows, circuits and movements that are often only revealed in times of crisis. The contradictory relations between the luxury sites at the urban core and the impoverished zones at the metropolitan periphery constitute a key feature of the cosmopolitan experience of city life in Johannesburg because they translate how the expectations of the modern metropolis after apartheid have been simultaneously frustrated and partially fulfilled (Murray, 2008a).

10 Whereas the phrase 'natural hazards' connotes the mindless, remorseless force of external nature as the key causal mechanism in the vulnerability of social life, the notion of 'hazardscape' refers to produced social spaces and the contestation and struggles over exposure to concrete geographies of vulnerability (Colten, 2005; Mustafa, 2005).

11 Chimaimba Banda, Benrose Squatters Still out in the Cold, *The Star*, 9 October 2001.

City-building in Johannesburg has always been an uneven process where class hierarchies and racial inequalities are inscribed in the morphological form of the urban landscape. These devastating fires that sweep with relentless regularity through the informal squatter settlements and self-built shantytowns on the periurban fringe have exposed the gross inequalities in income, housing and opportunities for economic advancement that have accompanied the headlong rush to establish Johannesburg after apartheid as a genuine 'world-class' city (Tomlinson, 1999; Beall *et al.* 2002; Bremner, 2002; Beavon, 2004; Murray, 2008a; 2008b).¹² They have also revealed the hidden compromises, trade-offs and choices that city-builders — including real estate moguls, architects and corporate builders, engineers, high-ranking municipal officials, urban planners and housing authorities — have made in order to focus attention on the primary task of fashioning self-sufficient 'urban glamour zones' in line with 'first-class' global standards, while at the same time largely neglecting the plight of the jobless and homeless residents of the city.

In following the lead of other aspirant 'world-class' cities, city-builders in Johannesburg have concentrated investments and resources in the construction of self-sufficient enclaves of luxury (with their 'showcase' projects and iconic architecture) catering for the well-do-do urban residents, the transnational business class and global tourists (Bremner, 1999; 2002; 2004a; 2005; Murray, 2008a). In contrast, informal settlements, squatter encampments and shantytowns, dependent upon faltering municipal services and dwindling resources, have been left to go their own way. In this Faustian bargain, the immediate needs of the urban poor have been set aside in the hopes that the economic benefits of market-led growth will eventually trickle down to the benefit of all (Bremner, 1999; 2002; 2004a; 2004b; 2005; Bond, 2002; McDonald, 2002).

In Johannesburg after apartheid, the horizontal expansion of metropolitan boundaries, including the emergence of 'edge cities' (Garreau, 1991) away from the historical urban core, the urbanization of the periphery and unplanned suburban sprawl, has created inordinate demands for basic resources, including physical infrastructure, social services and other amenities of urban living. The haphazard growth of the urban landscape has produced what can be called a 'galactic metropolis' where the tyranny of the capitalist marketplace in landed property has produced a disjointed and fragmented cityscape divided between the extremes of luxurious wealth and abject poverty. If the steady accretion of enclosed shopping malls, gated residential communities and gilded entertainment sites in the affluent northern suburbs has come to symbolize the fast-track entry of middle-class urbanites into the image-conscious, bling-bling culture of aspirant 'world class' cities, then the unfettered proliferation of overcrowded, resource-starved informal settlements on the periurban fringe of the Greater Johannesburg metropolitan region represents the dystopian features of distressed urbanism (Lipman and Harris, 1999; Bremner, 2000; 2004a; 2004b; Hook and Vrdoljak, 2002; Murray 2004). The spatial retreat of the propertied middle-class urban residents into fortified enclaves disengaged from the 'suffocating matrix of poverty and social violence' (Davis, 2005: 119) marks a decisive turn toward a new kind of exclusionary urbanism where the economically secure are able to disentangle themselves from a shared civic life with the urban poor (Murray, 2004).

12 The greatest challenge facing the Johannesburg municipality is the widening chasm between the wealthy areas of the city and the impoverished ones. In 2004, it was estimated that two-thirds of the population of the Greater Johannesburg metropolitan region were poor, the great majority of whom are black. Around 20% of urban residents live in abject poverty in informal squatter encampments without proper roads, electricity, or any kind of direct municipal services. Another 40% reside in inadequate housing, with insufficient or poor municipal services. Johannesburg is also a magnet for undocumented immigrants from other African countries, and the presence of large numbers of these 'illegal foreigners' puts a heavy strain on municipal and provincial services. Conservative estimates place unemployment at over 30% of the economically active population. See Melanie-Ann Feris, Jo'burg 'Is in a state of decline', *The Star*, 26 October 1999.



Figure 2 Close-up view of shack settlements, Alexandra Township

The informal settlements that have proliferated on the metropolitan fringe consist primarily of unauthorized agglomerations of self-built shacks located on tiny, unserviced plots lacking the basic social amenities required to secure a decent life. For the most part, these shantytowns blossomed on the fringes of established, formal townships where the owners and occupiers of authorized housing units enjoyed legal rights associated with buying, selling and renting of property. Between 1990 and 2005, the number of these squatter encampments skyrocketed from around 40 to more than 200 (see Murray, 2008b: 94).¹³ The expansion of such informal squatter settlements is largely due to the steady influx of newcomers to the city, along with the expulsion of those unable to secure a place to live in the formal townships or the settled residential areas closer to the city centre. Unable to pay even modest rental costs for backyard hovels in the overcrowded areas of existing formal townships, the ‘poorest of the poor’ are forced to seek shelter without official authorization on marginal lands with difficult topographies, dismal places lacking physical infrastructure and requisite services and located at considerable distances from the high-density areas of the metropolitan core (Khan, 2003; Murray, 2008b). Figure 2 above provides a visual image of dense shack settlements in Alexandra township.

Beginning in the mid-1980s, state authorities responded to the accommodation needs of the rapid influx of newcomers to the Greater Johannesburg metropolitan region by allocating large tracts of cheap land to informal settlements along the environmentally degraded mining belt south of the central city. More than a dozen unregulated, informal settlements (notably Orange Farm, Vlaktefontein, Grasmere, Ennerdale, Sweetwaters, Poortjie and Weiler’s Farm) straddle the ‘Golden Highway’ heading south from Soweto (with its close to two million residents) and toward the industrial towns of the Vaal Triangle. During the 1990s, municipal officials linked these unserviced, informal

13 See South African Cities Network, Govt Shift on Shack Dwellers, *Mail & Guardian*, 13–19 July, 2004.

settlements with existing formal townships to form a continuous belt of low-income residential accommodation (varying in quality from modest formal housing to rudimentary shacks) stretching from Katlehong, Thokoza and Vosloorus in the central Witwatersrand (in the general vicinity of the industrial towns of Alberton and Germiston) to KwaThema, Tsakane, Duduza, Daveyton and Wattville in the southeast (or the East Rand) (see Figure 1).¹⁴ It is here along the east-west axis of environmentally degraded land cluttered with the discarded waste of abandoned gold mining operations that the bulk of urban black residents were forced to live under apartheid, and it is here that the spillover from settled but vastly overcrowded townships and the steady influx of migrants from the surrounding areas — perhaps two million people in all — have carved out makeshift living space in densely packed informal settlements and in newly subsidized housing projects, outdistancing the capacities of municipal authorities to provide even the most rudimentary services such as electricity, sewerage, garbage collection and paved roads (Lupton and Wolfson, 1994; Tomlinson, 1999; Murray, 2008a; 2008b).

These informal settlements occupy hybrid spaces on the metropolitan fringe that combine a haphazardly constructed built environment with ‘hunted-and-gathered’ materials, such as river-water, tree limbs for fuel, wooden poles, tin sheeting, cardboard, and plastic covering, that are scavenged from wherever they can be found. These squatter encampments are not fixed entities with stable boundaries and clearly defined landmarks. Instead, they are evolving places with expanding perimeters that have significantly imperilled the delicate ecological balance of the metropolitan fringe. The relentless growth of these informal squatter settlements involves a voracious consumption of the natural ecoscape, not a sustainable co-habitation with it. Steady increases in the population of such unregulated sites of accommodation have dramatically accelerated the environmental destruction of the surrounding landscape. Desperate shack-dwellers have little choice but to systematically devour available material resources, with the tragic result that they have over-taxed the ‘carrying capacity’ of the land. Stagnant ponds and polluted waterways have become both sources of drinking water and sites for washing and bathing. Without environmentally sound ways to dispose of garbage and useless waste, the unwanted detritus of impoverished living piles up in enormous trash heaps, which are periodically subjected to burning. Stripped of wood and brush, the terrain that surrounds squatter encampments has come to resemble a barren moonscape (Royston, 2003).

The spasmodic hyper-growth of these post-apartheid dumping grounds for the urbanizing poor has transformed the metropolitan fringe into a battleground, pitting municipal authorities who have vowed to prevent ‘another Zimbabwe’ against homeless squatters with literally nowhere else to go.¹⁵ While the municipal authorities have promised to provide low-cost housing in authorized ‘site-and-service’ schemes along the outer edge of the expanding metropolis, the demand for shelter has far exceeded the supply. Having grown weary of patiently waiting, large numbers of homeless squatters have simply erected shacks wherever they have found unused and unoccupied open ground (Huchzermeyer, 2003; Khan, 2003; Greenberg, 2004).

Nightmare urbanism: informal squatter settlements and the ‘ring of fire’ encircling Johannesburg

The paediatric burn unit at Chris Hani/Baragwanath hospital [in Soweto] is reputedly one of the best of its kind in the country. It is in this unit that one sees the true face of poverty. The beds

14 Significantly, the townships of Katlehong (1945), Tembisa (1957) and Vosloorus (1963) can trace their origins to forced removals in which poor black urban residents were expelled from residential accommodation closer to the central city and relocated on environmentally hazardous land to the south (Lupton and Wolfson, 1994: 117).

15 H. Radebe, Law Set to Stop Land Invaders in their Tracks, *Business Day*, 3 September 2003; S. Mboyané, Gauteng to Get Tough on Land Invasion, *Business Day*, 10 June 2004.

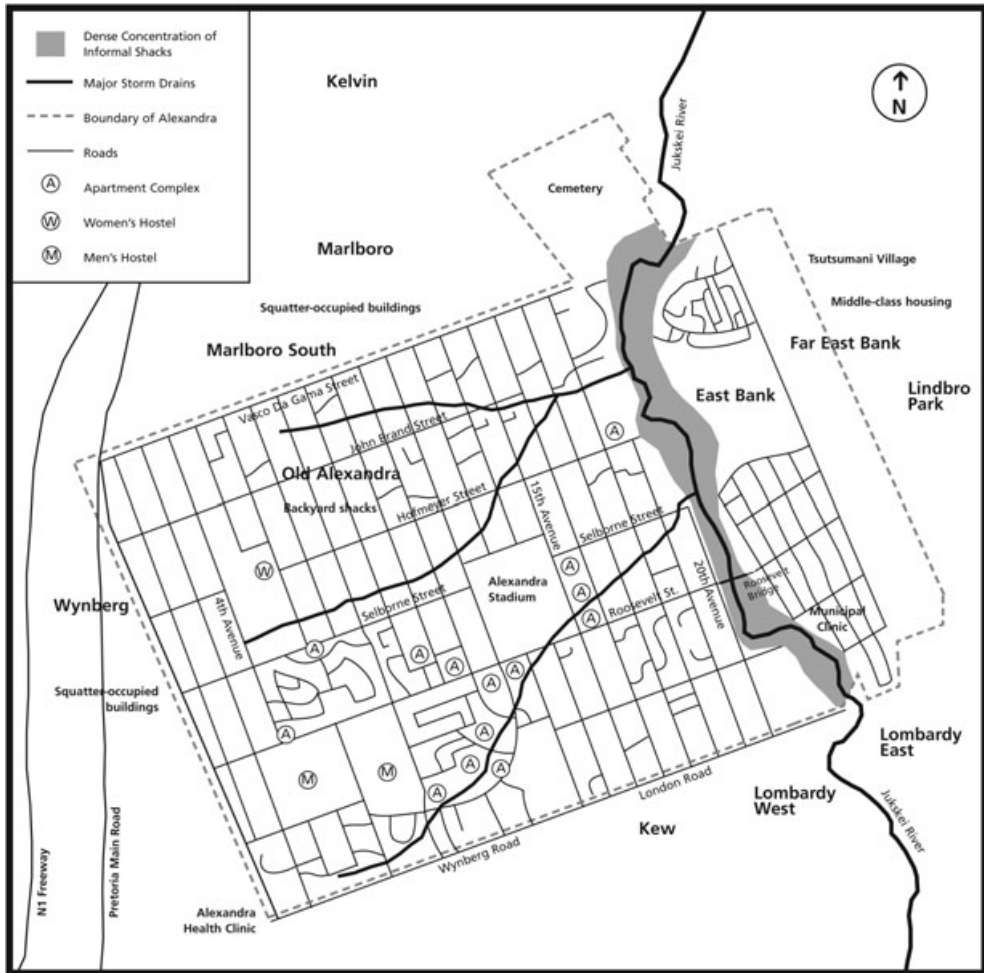


Figure 3 Alexandra Township map

are nearly always filled to capacity with children who have been burned in ways that indicate that, had their parents had better life options, the injuries would have never occurred. The unit is particularly full during the winter months when families burn fuel to keep themselves warm.¹⁶

Even before the embers had cooled, the victims of the September 2003 Alexandra fire began to rebuild their flimsy shacks, using whatever burnt materials they could manage to salvage from the devastating conflagration. Homeless squatters simply have nowhere else to go. Yet worried municipal authorities (working under the auspices of the Johannesburg Metro Disaster Management and Logistical Support Department) openly questioned the wisdom of allowing squatters to rebuild residential dwellings in the same location, and so close together, because the flammable building materials and the spatial layout simply magnified the ease with which another inadvertent or accidental spark could trigger a similarly devastating firestorm (see Figure 3).¹⁷

16 South Africa: Children of Fire, *Africa News*, 2 February 2001.

17 Matthew Burbidge, Rebuilding Alexandra Poses New Threat, *The Star*, 17 August 1999; and Solly Maphumulo, Toppled Stove Leaves Hundreds Homeless, *The Star*, 10 September 2003.

These dire forecasts of impending doom came to fruition almost immediately as fiery infernos erupted virtually simultaneously in Alexandra and Slovo Park on 22 December 2003. In Alexandra, fire broke out in the vicinity of Vasco da Gama and Tenth Street, resulting in the loss of close to two dozen corrugated iron shacks and driving hundreds of people from their homes. In the Slovo Park blaze, two people perished and several more were severely injured and close to 300 shack dwellers were left homeless. It was a bleak Christmas indeed.¹⁸

Periodic firestorms of this magnitude (and even greater) have routinely raged through Alexandra and other informal settlements, leaving smouldering shacks levelled to the ground, household goods burnt beyond recognition, and countless numbers of fatalities and serious injuries in their wake. Organizations like Children of Fire (an organization that promotes 'fire prevention' projects in the densely populated squatter settlements encircling Johannesburg) have complained that the main media routinely overlook fires — even major ones — in places like Alexandra, treating them as 'non-events' so commonplace that they are not newsworthy. While emergency service personnel working in Alexandra have estimated that one particularly risk-prone squatter area called Setswetla routinely experienced up to 60 fires a month, the majority of these blazes go unreported.¹⁹ Bronwen Jones, Director of Children of Fire Trust, has charged that figures for fire-related injuries are not compiled in any meaningful way. Both official records and newspaper accounts consistently under-report the numbers of burn victims, especially the deaths of children who expire later on due to the severity of their injuries.²⁰ Yet by sifting through available evidence gleaned from both published media reports and unpublished observations of various 'fire prevention' organizations, it is possible to piece together a cursory glimpse, albeit partial, of the fire devastation in Alexandra.²¹ This chronological list — provided in Table 1 — reveals the relentless regularity with which shack-fires have destroyed homes and disrupted the lives of the urban poor.²²

Yet Alexandra is not alone. City officials in Johannesburg confirmed that there were 37,604 fires, mostly involving squatter encampments, in 1997. In the following year, the figure increased by 25% to 52,753 reported incidents.²³ Raging firestorms have routinely ravaged impoverished squatter encampments in a veritable 'ring of fire' that virtually encircles Johannesburg. Residents of such spatially dispersed squatter settlements as Benrose and George Goch (southeast of Johannesburg), Diepsloot (near Fourways), and Slovo Park (located between Crosby and Mayfair on the western edge of Johannesburg) were frequent victims of wind-whipped blazes that regularly swept through the tightly-packed clusters of shacks separated by little more than well-worn earthen pathways.²⁴ Hastily mobilized bucket-brigades of resident volunteers often play

18 SAPA, Appeal for Help after Fires, *South Africa Press Association*, 22 December 2003.

19 Safer Gadgets to Prevent Fires in Alex, City of Johannesburg Official Website, 10 July 2007, available at www.joburg.org.za (last accessed 10 July 2008).

20 Burn victims are over-represented in two age categories: children from one to four years of age; and children ten to fourteen years of age. One-third of all burns are intentional, brought about by attempted suicides, people throwing stoves at each other, and attempted murder. Interview with Bronwen Jones, Director, Children of Fire Trust, 27 May 2006.

21 I learned a great deal from a number of on-site visits to fire-prone squatter settlements with Mzwanele Mayekiso (born and raised in Alexandra township), the staff at Children of Fire, and Trevor Ngwane (a political activist living in Pimville, Soweto).

22 SAPA, Devastating Fire Leaves 450 Homeless, *South Africa Press Association*, 14 August 1999; and SAPA, Appeal for Help after Fires, *South Africa Press Association*, 22 December 2003.

23 SAPA, See Squatters Receive Fire Training, *South Africa Press Association*, 3 April 2000.

24 At Slovo Park, it was reported in 2000 that there were only two water taps for more than 1,500 people. Without access to water, fires burned out of control. See Squatters Receive Fire Training, SAPA, 3 April 2000. See also Khanyisile Nkosi, Blaze Ravages Squatter Camp, *The Star*, 15 July 2001; and Ndivhuwo Khangale, Thousands Lose All in Runaway Joburg Fire, *The Star*, 25 August 2003.

Table 1 Firestorms and Alexandra

Date	Location	Damage	Cause
12 August 1999	Ward 36	hundreds of shacks gutted; entire Ward destroyed; 450 people left homeless	illegal electricity connection
27 October 1999	Angel's Home day care centre	building for abused children destroyed; 80 left homeless	unknown cause
13 February 2000	8th Avenue	7 shacks destroyed; one man died	unattended paraffin stove
19 July 2000	14th Avenue	one infant burned to death; several shacks destroyed	faulty gas cylinder
3 September 2000	Unnamed squatter settlement	one man died	unknown cause
16 December 2000	Unnamed squatter camp	15 shacks destroyed; 70 left homeless	unattended candle
4 September 2001	Unnamed shack settlement	40 shacks burned	arson
June/July 2002	6th, 8th, 9th Avenues [three small fires]	several dwellings destroyed	unknown cause
12 July 2002	14th Avenue/Rooseveldt Road	22 shacks reduced to rubble	unknown cause
18 July 2002	Setswetia squatter settlement	70 shacks destroyed 154 left homeless	paraffin stove overturned
5 August 2002	6th Avenue/London Road	90 shacks destroyed one fatality	faulty paraffin stove
5 September 2002	5th Avenue squatter camp	24 shacks destroyed	faulty primus stove
14 October 2002	Setswetia squatter settlement	8 shacks destroyed or damaged	unknown cause
7 November 2002	Unnamed shack settlement	98 people left destitute; 50 shacks gutted	malfunctioning primus stove
9 February 2003	11th Avenue squatter camp	close to 50 shacks destroyed; 96 people left destitute	unknown cause
late May 2003	Setswetia squatter settlement	several families destitute	exploding paraffin stove
late May 2003	Setswetia squatter settlement	several families destitute	illegal electrical connection
Early June 2003	1st Avenue	one fatality; many injuries; shacks destroyed	knocked-over candle

27 June 2003	19th Avenue	woman burnt to death; 10 shacks destroyed	unknown cause
9 February 2003	11th Avenue squatter settlement	96 people left destitute	unknown cause
8 August 2003	Setswelia squatter settlement	108 dwellings destroyed	police raid on illegal immigrants
4 September 2003	Informal settlement	3 people burned to death; six shacks destroyed	unattended candle
9 September 2003	Unnamed shack settlement	300 shacks destroyed; 600 homeless	unattended cooking-stove
21 December 2003	10th Street/Vasco da Gama	20 shacks destroyed	unknown cause
31 December 2003	Unnamed squatter settlement	50 shacks destroyed; hundreds left homeless	candle
14 August 2004	Unnamed squatter settlement	30 shacks destroyed	faulty electrical connection
18 August 2004	Informal settlement	40 shacks destroyed; 130 people homeless	faulty electrical connection
11 January 2005	Informal settlement	30 shacks destroyed; many homeless	cooking fire
4 February 2005	Unnamed squatter settlement	40 shacks destroyed; 100 people left homeless	unattended paraffin stove
16 May 2005	Abandoned shopping centre	homeless squatters driven out	unknown cause
25 June 2006	8th Street and Selbourne	10 shacks destroyed; 100 persons homeless	unknown cause
10 July 2006	Lombardy East	family of three, including eight-year-old boy	unknown cause
12 July 2006	Shack settlement	two-year-old child died; shack destroyed	paraffin stove
13 July 2006	Shack settlement	three-year-old child died	unknown cause
7 September 2006	Intersection Gordon Road and 3rd Avenue	25 shacks destroyed; no deaths reported	conflict amongst residents

Sources: SAPA (14 August 1999; 17 December 2000; 19 July 2002; 6 September 2003; 22 December 2003; 1 January 2004; 15 August 2004; 11 January 2005; 5 February 2005; 17 May 2005; 26 June 2006; 8 September 2006), *The Star* (15 August 1999; 14 February 2000; 3 September 2000; 5 September 2001; 8 November 2002; 10 September 2003; 19 August 2004), *The Sunday Times* (9 August 2002; 29 June 2003), *SABC News* (13 July 2006), *702 Talk Radio/Eyewitness News* (13 July 2006)

a significant role in dousing small fires, but they have proven to be no match for the huge blazes that consume everything in their paths.²⁵

In the typical case, emergency service crews provide residents of squatter camps destroyed by fire with tents, old shipping containers, or corrugated iron sheds with earthen floors and only large enough to accommodate four people. Yet when relief agencies are depleted of emergency stocks, burned-out victims of fires are often forced to spend bitter cold nights in the open, without food, clothing or shelter. If this situation is terrible for fire victims in officially sanctioned informal settlements, it is considerably worse in places like Benrose, a squatter encampment located in the historic but abandoned mining belt southeast of the central city and straddling a railway line next to a run-down factory. Even though this squalid site has been in existence for 7 years, it is not formally registered with municipal housing authorities. Hence, victims of fires, floods or other disasters are not eligible for municipally sanctioned, emergency relief social services.²⁶

The common denominators that have accompanied virtually all the firestorms that have gutted informal settlements include inadequate fire prevention measures, particularly inefficient firefighting procedures and the lack of proper equipment. In recent years, a number of emergency services experts have begun to openly question the ability of Johannesburg fire services to respond to fires and other emergencies. In late spring 1999, Louis Dezelan took a leave of absence from his duties as Fire Chief with the Indianapolis Fire Department in order to take part in an organized tour of the fire-fighting capabilities of emergency services personnel in the Greater Johannesburg metropolitan region. As a knowledgeable 'outsider', he was able to gain access to fire stations throughout the city. He first visited the Sandton fire station. While he found that the station facilities and the firefighters assigned there were remarkably similar to comparable operations in Indianapolis, he concluded that firefighting in nearby Alexandra was an entirely different matter. Located just across the main N1 highway from Sandton on the northeastern edge of Johannesburg, Alexandra is an overcrowded impoverished area where an estimated 350,000 to 500,000 people are crowded into an area of one-square mile. There are no high-rise structures in Alexandra. In fact, there are very few buildings over one-storey high. Besides the original housing stock of brick houses laid out in neat rows along tiny streets in the centre of the township, the built environment consists to a large extent of squatter shacks, tiny 12 × 12-foot dwellings constructed of discarded materials, including scraps of wood, cardboard, plastic, and metal loosely nailed together. The roofs of the shacks are usually corrugated metal sheets (euphemistically referred to as 'zincs'), with chunks of concrete block piled on top to keep them from blowing away in high winds. These makeshift dwellings are built without codes and without official permission from municipal authorities, and are no more than a few feet apart. The labyrinthine pathways between the tightly-packed rows of shacks are simply dirt paths, and there are tens of thousands of these shacks clustered together in various squatter encampments geographically dispersed throughout Alexandra, especially along the banks of the flood-prone Jukskei River (see Figure 4).²⁷

With 26 fire stations, the Indianapolis Fire Department serves 400,000 citizens who live in a 93 square mile area. In contrast, the Johannesburg Fire Brigade has 26 fire stations to serve a population of more than 4 million spread over an area around four times as large as Indianapolis. According to Dr. John Borden, national director of Netcare, a private medical care company, fire and emergency services for the Greater Johannesburg metropolitan region had reached a crisis point by the late 1990s if not

25 Khanyisile Nkosi, Blaze Ravages Squatter Camp, *The Star*, 15 July 2001; Chimaimba Banda, Benrose Squatters Still out in the Cold, *The Star*, 9 October 2001; and South Africa: Children of Fire, *Africa News*, 2 February 2001.

26 Chimaimba Banda, Benrose Squatters Still out in the Cold, *The Star*, 9 October 2001.

27 Louis Dezelan, A Visit to Alexandra, *Fire Chief*, 1 August 2000.



Figure 4 The Jukskei River

before. According to his research, there was simply not enough available staff to provide necessary services. The lack of funding for repairs and maintenance meant that half the fleet of fire emergency vehicles was out of service at any given time. Perhaps even more ominous, dilapidated high-rise buildings occupied by squatters posed a grave risk of catastrophic fire, because there was only one platform ladder truck in the entire city available for fire fighting. The numbers of volunteer fire-fighters to supplement firefighting staff had dwindled from 250 in years past to between 50 and 80 men and women in mid-2000. He contended that there were only ten ambulances to service the entire city of around 3.5 million people, including such densely populated areas as Soweto and Alexandra. In contrast, in the mid-1990s, there were 50 ambulances and 'response cars' and 45 paramedics on duty at all times to serve the city. The situation had deteriorated so badly that if there were a backlog of calls, even in life-and-death situations, operatives at the Johannesburg emergency services control room were instructed to inquire whether the patient had medical coverage or insurance. If he or she did, then they dispatched a private ambulance service to respond to the



Figure 5 Long view of shack settlements, Alexandra Township

emergency. If not, patients were told to seek alternative arrangements, or call back within 20 minutes.²⁸

In Alexandra and other townships on the urban periphery, impoverished residents routinely tap into the electrical supply lines illegally, creating a dangerous tangle of jerry-rigged wiring that dangles precariously over the shacks. Utility poles have dozens of illegal wires running in every direction, ‘spider-webbing’ to the nearby shacks. Hundreds of flimsy wires dangle precariously above the shacks. At times, wires run from a utility pole on one side of the road to buildings on the other side. The wires simply lie in the street where passing cars, bicycles and pedestrians run over them. In some areas, residents have cut small trenches in the streets so that illegal wires rest in the grooves just below pavement level, temporarily protected from passing vehicles (see Figure 5).²⁹

Organizations like Children of Fire have complained bitterly that high-ranking municipal authorities, including Amos Masondo (the Mayor of Johannesburg), emergency service personnel and officials from Johannesburg Disaster Management, have consistently failed to respond to urgent requests concerning woefully inadequate fire prevention services in Alexandra and other townships.³⁰ The Brixton Fire Brigade covers some large apartment buildings and at least three large squatter camps, including the fire-prone Slovo Park. But this Brigade is often severely understaffed. The Benoni

28 Jo’burg Emergency Services Need Kiss of Life, *The Star*, 16 August 2000.

29 Louis Dezelan, A Visit to Alexandra, *Fire Chief*, 1 August 2000.

30 Interview with Bronwen Jones, Children of Fire, 15 June 2006.

Fire Brigade — the only private fire-fighting service in South Africa — covers a wide area that includes an estimated 600,000 people living in squatter camps. The nearby Brakpan Fire Brigade is responsible for a geographically dispersed area that includes at least 800,000 people living in squatter camps.³¹

Assigning culpability and apportioning blame: proximate causes for individual fire-events versus social determinants of fire-regimes

Even a cursory review of the official statements of emergency services personnel (culled from newspaper reports and public pronouncements) reveals a clear tendency to attribute the outbreak of shack-fires to overturned stoves, or unsafe paraffin lamps, faulty electrical connections, illegal wiring and unattended cooking-fires. By narrowing the focus to particular reasons for individual fire-events, it is easy to attribute the immediate cause for ignition to the carelessness, negligence, recklessness or inattention of the irresponsible shack-dwellers themselves, thereby effectively blaming the victims of misfortune for their own sorry state of affairs.³² But this focus on the proximate causes of particular fire-episodes ignores the wider environmental setting and socio-economic circumstances within which disastrous fires take place. By recruiting human frailty or sheer accident to their cause, key city-builders have been able to rationalize municipal policy-choices that have accomplished little toward changing the circumstances under which the urban poor — who bear the awful brunt of these continuing cycles of death and destruction — tend to invariably find themselves in harm's way (Steinberg, 2000: xix–xx).

Shack-fires do not just 'happen': they are the unavoidable outcome of a historically specific convergence of particular environmental conditionalities. In the absence of 'fire-risk' zoning and other preventive measures, the firestorms that regularly sweep through informal settlements are inevitable. While assigning culpability and arbitrating guilt are essential components of criminal investigations, what really matters — from the point of view of understanding the ideal-typical 'fire regime', with its evolving patterns, frequencies, ferocity and spatial distribution of fire occurrences, are the environmental conditions that transform tiny sparks of ignition into raging conflagrations that take innocent lives and destroy shelter for those with few options for decent housing.³³

The firestorm that surged through Slovo Park in March 2004, leaving at least eight dead and many more seriously injured, destroying hundreds of shacks and resulting in more than 3,000 homeless, underscores the complexity of sorting through the chains of causality that need to come together to produce such catastrophic events. Assigning culpability and apportioning blame is not a simple task, because it involves movement across scales, operating at different levels of analysis, and considering different dimensions of social life. Looking at the Slovo Park tragedy through a wide-angle lens that brings multiple scales into the frame of analysis enables us to recognize how investigating this particular fire-event does not yield a simple, linear narrative that can be transparently decoded as the real story of what happened and why.

Surveying the devastating scene, fire inspectors concluded that in all likelihood a defective paraffin (kerosene) stove was the source of the initial outbreak of fire. Families

31 See news release entitled Fire Brigades. Available at <http://www.icon.co.za/~firechildren/firebrigades.htm> (accessed 10 July 2008).

32 SAPA, Devastating Fire Leaves 450 Homeless, *SABC News*, 14 August 1999.

33 Some of these ideas are fashioned for my own purposes from an interview with Mike Davis in Ted Rohrlich, Seer of L.A., or Blinded by its Light?, *Los Angeles Times*, 13 April 1999.

living in informal squatter settlements typically use cheap, badly constructed paraffin stoves for simple household chores like cooking, boiling water and generating heat. Yet a series of tests commissioned by the Paraffin Safety Association of Southern Africa (PSASA) in 2003 found that nine of the best-selling paraffin stoves failed to meet the basic safety requirements set by the South African Bureau of Standards.³⁴ An estimated 40–50% of households in South Africa —around 20 million people in all — rely on paraffin stoves daily, because they are one of the cheapest sources of domestic energy. As a result of design flaws and poor quality of manufacture, paraffin stoves can quickly reach dangerously high temperatures, are prone to fuel leaks, and are easily knocked over when in use. Paraffin is a highly flammable and hence dangerous fuel because of its low flashpoint. At certain temperatures, paraffin forms a combustible vapour-air mixture that bursts instantaneously into flames when ignited — an occurrence referred to as *flashing*. When used improperly or accidentally tipped over, paraffin stoves often explode into huge fireballs. Users of these unsafe stoves sometimes intentionally mix highly flammable fuels such as diesel and gasoline with paraffin so as to improve the combustibility, thereby magnifying the risk of fuel flashing.³⁵

According to PSASA estimates, unsafe paraffin stoves are linked to somewhere between 40,000 and 80,000 household fires each year, with the result that over 100,000 shack-dwellings burn to the ground and between 2,500 and 3,000 people (particularly children) lose their lives (Lloyd, 2002: 56; Fowler, 2005). It is estimated that fires linked to defective paraffin stoves cause 75% of all burn deaths in South Africa every year. But in the absence of a national incidence surveillance system, it is not really possible to accurately assess the full extent of the actual numbers of deaths and the even greater number of non-fatal yet serious injuries due to burns. Paraffin is also a poisonous substance and, if ingested, can cause chemical pneumonia, an often fatal condition that at least 55,000 poor children in South Africa contract each year. Accidental ingestion occurs regularly because paraffin is a clear liquid that can be easily mistaken for water. Indoor cooking methods that rely upon burning paraffin, wood and coal contribute to high rates of diseases such as pneumonia, acute respiratory infections and chronic obstructive lung disease. When lit, paraffin stoves release harmful carbon monoxide gas and fine particulate emissions. High levels of exposure to carbon monoxide can cause hypoxia, leading to unconsciousness and in some cases death, while particulate emissions, some of which are recognized carcinogens, can cause acute respiratory infections (Fowler, 2005: 13).³⁶

Despite repeated warnings to take these lethal firebombs off the market, leading manufacturers have continued to sell these substandard devices, and poor people have continued to purchase them because they cannot afford the safer, yet more expensive brands. The SABS singled out a Chinese-South African manufacturer, Tao Ying Metal Industries in Bloemfontein, the makers of the popular Panda stove, as a major supplier of defective paraffin cooking devices. The SABS issued numerous legal directives to the company, demanding the recall of all its non-compliant products in the market and outlawing the sale of existing stock. Along with other major suppliers, Tao Ying Metal ignored these warnings, trying to deflect attention by claiming that it exported all its unsafe stoves to Namibia and Lesotho.³⁷

34 It is important to point out that the PSASA is an organization funded by oil companies and dedicated to the safe use of paraffin.

35 Ban the Firebomb Stoves: Most SA Paraffin Cookers are Unsafe, *Cape Argus*, 16 March 2004.

36 See Paraffin Stoves Labelled as 'Firebombs', *The Star*, 16 March 2004; Candice Bailey, Poverty Keeps Killer Stoves Burning in SA Homes, *Cape Argus*, 14 May 2004; Michael Hamlyn, SABS Warns against Paraffin Stove, *SAPA*, 29 October 2007; and Safer Gadgets to Prevent Fires in Alex, City of Johannesburg Official Website, 10 July 2007 (www.joburg.org.za, accessed 10 July 2008).

37 Michael Hamlyn, SABS Warns Against Paraffin Stove, *SAPA*, 29 October 2007; and Candice Bailey, Poverty Keeps Killer Stoves Burning in SA Homes, *Cape Argus*, 14 May 2004.

Fire regimes and the tyranny of emergency: making sense of extreme events

This is the third time that our shacks got burnt but at least this time I managed to save some of my clothes (Alfred Mhlanga, resident of Alexandra).³⁸

For those impoverished and desperate people packed into the sprawling informal settlements that encircle Johannesburg, late May to early September is the nightmare season of fire and ice. From late afternoon to early morning, these vast squatter encampments are shrouded in the low-hanging pall emanating from countless wood-burning stoves, smouldering coal-fires, and burning trash heaps. In the freezing cold winter months, when households rely on kerosene lamps or candles for light and open fire pits for warmth, inadvertent outbreaks of fire are frequent occurrences. Informal squatter settlements simply defy environmental common sense (Davis, 1999). Makeshift shelters are typically constructed of highly flammable materials — like plywood, timber and cardboard. The densely packed settlement patterns of squatter encampments greatly increase the risk of small fires turning into raging firestorms, with the inevitable result of widespread destruction, leaving thousands of shack-dwellers destitute and homeless.³⁹ Once a blaze gets started, it becomes virtually impossible to stop it from spreading quickly. In informal settlements and squatter encampments, raging shack fires frequently leave a trail of destruction, claiming the lives of scores of victims and leaving countless others destitute and homeless.⁴⁰

In order to truly comprehend the connection between hazards and risk-prone environments it is necessary to distinguish between proximate causes for particular fire-events — faulty wiring, overturned stoves, dangerous coal-burning, and the like — and the systemic, root causes of disaster vulnerability, namely, the socio-economic marginality of residents of informal squatter settlements and environmental degradation (Wisner, 2001: 251). Devastating squatter fires are produced through complex chains of conditions operating at multiple scales and registers that come together in path-dependent ways to make such catastrophic events virtually inevitable. The oft-repeated claim that such social disasters stem from random and natural (and hence unavoidable) forces is tantamount to adopting a constrained view of responsibility, obscuring the broader social forces that offer poor people no other choice but to seek shelter in such hazardous and risky environments in the first place. Social catastrophes like the periodic firestorms that rage with relentless fury through the informal squatter settlements of Johannesburg cannot be reduced to technical matters where ‘problem-solving’ solutions rest with better education, proper engineering, and availability of fire suppression technologies. At their core, these catastrophic events are inextricably linked with widely disparate patterns of urban living that stem from gross inequalities of wealth and power (Wisner, 1993; 1995a; 1995b; 1997).

The damage and destruction caused by fire frequently trigger an outpouring of generosity, as well-meaning middle-class urbanites donate food, clothing, blankets and money to assist families rendered homeless and destitute by devastating fires. While these altruistic gestures invariably bring some immediate relief to victims of fire, they tend to overlook and ignore the root causes of social disasters of this sort.⁴¹ Contrary to the typical portrayal of these calamitous events in official pronouncements, the

38 Alfred Mhlanga quoted in Alex Man Burns to Death in Shack Fire, *The Star*, 14 February 2000.

39 Solly Maphumulo, Toppled Stove Leaves Hundreds Homeless, *The Star*, 10 September 2003; Peroshni Govender, Bucket Brigade Tames Alex Blaze, *The Star*, 8 November 2002; Anna Cox and Themba wa Sepotokele, Shack Fires Leave Two Dead, 300 Homeless, *The Star*, 3 September 2000; and SAPA, Hundreds Homeless after Joburg Fire, *The Star*, 1 January 2004.

40 Anna Cox and Themba wa Sepotokele, Shack Fires Leave Two Dead, 300 Homeless, *The Star*, 3 September 2000.

41 Khanyisile Nkosi and Anna Cox, Homeless Fire Victims Need Food, Clothes, *The Star*, 15 August 1999.

popular media and public opinion as accidental occurrences that are the unfortunate price to be paid for living in squatter camps, incendiary disasters do not just erupt in a manner akin to spontaneous combustion. On the contrary, these devastating firestorms, which take place with predictable regularity, are the inevitable outgrowth of the spatial layout of informal squatter settlements, stockpiles of combustible material, inadequate fire prevention measures, and inferior fire suppression techniques. As Mike Davis (1999: 107–8) points out (following the work of Stephen Pyne), there is no ‘natural order’ of catastrophic fires: the complex causal linkages which determine their magnitude and ferocity evolve over time in relation to their historical context. Incendiary disasters are always embedded in the double specificity of natural history and the evolving patterns of social life that give rise to what Pyne (1995) has called a ‘fire regime’. The intersection of changing settlement patterns, building typologies and inadequate fire prevention measures, combined with inferior fire suppression techniques in the informal squatter encampments have conspired to produce the main ingredients essential to the perfect firestorm. First, makeshift shacks are typically constructed of waste or recycled materials such as wood, cardboard, zinc-plating and plastics. These stockpiles of highly flammable materials provide an extraordinary (or nearly inexhaustible) supply of combustible fuel that enables even the most innocuous accidental fires (that under normal conditions could be easily extinguished) to quickly balloon into large, uncontrollable ones. Second, the widespread use of coal-burning stoves for cooking, faulty electrical connections, paraffin lamps, gas cylinders and unprotected candles provide ripe conditions for easy ignition. The situation is made even worse in the bitter-cold, winter months, when residents typically rely on open-pit fires for warmth. Third, and finally, fire suppression is made even more difficult by the combination of spatial layout of informal squatter settlements, slow response time of fire-fighting teams, lack of proper equipment, and inadequate water resources. Makeshift shack dwellings are often assembled on uneven or sloped ground and in close proximity to one another, due to space constraints, with no adequate planning for accessibility. Overcrowded shacks, clustered together in closely packed settlement patterns, and typically reached only by narrow footpaths, constitute genuine fire hazards of significant proportions. Catastrophic firestorms are inevitable as long as municipal authorities tolerate unregulated building of informal settlements on the periurban fringe without adequate means of fire prevention and suppression. Living in squatter encampments puts residents at grave risk to uncontrollable fires that threaten to escape all means of containment (see Davis, 1999: 107–8, 130–6, 140–7; 2003; see also Wisner, 1995a; 1995b).

The spatial conjunction of a human settlement and a potentially destructive agent does not inevitably produce a tragic disaster: a disaster only becomes unavoidable in the wider context of a socially constructed pattern of vulnerability and risk expressed in the linkage between location, infrastructure, socio-political organization, production and distribution systems, and prevailing discursive understandings of the situation (Oliver-Smith and Hoffman, 2002: 3; Mustafa, 2005). In the face of urgency, and even desperation, the urban poor often experience great difficulty in maintaining an open-ended, or long-term temporal horizon that enables planning ahead. The constant barrage of real threats to life and livelihood assail the urban poor with relentless regularity. The ‘tyranny of emergency’ — to borrow a phrase from Jérôme Bindé (2000) — that characterizes the everyday lives of the urban poor makes it very difficult for them to plan ahead, to invest in long-term relationships, to move beyond improvisation and experimentation. The urban poor who inhabit these barren places on the exurban fringe struggle to survive. With limited access to clean water supplies, squatters turn to alternative sources: polluted rivers and irregular streams, bore-holes and bottled water of suspicious origin. Sickness and disease, especially amongst the young and the old, are rampant. Without schools, children during the day are often left to their own devices. Without formal work, unemployed youth often turn to crime (Bremner, 1999).

The metabolic metropolis: the spatial vulnerability of the urban poor

Extreme events, like fires, flooding, and bitterly cold or hot weather, often cause technological networks to break down, allowing the urban residues of decay to burst into the open, to become visible, and to threaten stability and order (Davis, 1999: 1–16). The unpredictability of the social catastrophe associated with ‘natural’ disaster exposes the fallacy behind the myth of the perfectly managed city (Kaika and Swyngedouw, 2000: 135–6). The breakdown of technological networks is an extraordinary event for affluent urban residents. Yet for those excluded from the mainstream of urban life with its workable technological networks, the crisis of everyday living — linked as it is to inadequate services, collapsing infrastructure and environmental pollution — is a permanent condition (see Figure 6). By exaggerating the role of natural forces in the destruction caused by extreme weather events, those in power are able to rationalize the hidden hand of a market-driven socio-economic system that allows a privileged few to live luxurious lives in stately mansions while many survive in flimsy shacks. As with sudden flooding and freezing cold, the tendency to treat the disastrous effects of shack fires as unfortunate accidents enables emergency service personnel, health and safety officials, and urban policy experts to disavow culpability in the social production of deprivation and hence evade any moral responsibility for what happens (Steinberg, 2000: 197–201). To the extent that key policy-makers ignore their own complicity (through their own decisions and non-decisions), they contribute to the normalization of the state of exception — its banality — and thereby effectively trivialize the plight of the urban poor (Castel, 2000; Fassin and Vasquez, 2005).

Because they have seized the opportunity to construct self-built shelter in unauthorized shack settlements on the metropolitan fringe, illegal ‘land invaders’ occupy a legal limbo where they are subjected to the administrative enforcement of law yet not entitled to the legitimacy associated with the ontological status of rights-bearing legal subjects. As seminal turning-points, the fires and floods that regularly uproot residents of informal squatter settlements effectively expose the shelterless poor to the limits of their political status, stripping them of the right to unimpeded movement, the right to protection, and even ‘the right to claim rights’ (Braun and McCarthy, 2005: 803). This liminal status does not mean that they are placed entirely *outside* the jurisdictional boundaries of the law, literally left on their own and banished to a place equivalent to a state of nature. On the contrary, the urban poor who occupy unauthorized squatter settlements are simultaneously deprived of the law, that is, unable to call upon it for assistance, and subjected to the law, that is, bound to abide by its statutory restrictions (Agamben, 1995; Nancy, 2000; Bakker, 2005).

Just as the conventional ‘natural hazards’ approach to disaster research has been rightly criticized for failing to adequately account for the social production of vulnerabilities, so too much contemporary theorizing about citizenship largely overlooks the complex and shifting relationships between differential inclusion into the mainstream of urban life and the production, distribution and administration of environmental risks and responsibilities. As Braun and McCarthy (2005: 804) have persuasively argued, citizenship, and the dynamics of social inclusion and exclusion more broadly, cannot be understood as simply constituted in law or in language, or conceived as a property that belongs inherently to the subject; they must be seen as inextricably linked with the biophysical fabric of the city. Put another way, social inclusion in the body politic — which amounts to full participation in the mainstream of urban life — entails both access to the vast life support systems that the city provides and reasonable protection from hazards and risks (Gandy, 2002: 9–11; Staeheli, 2003).

Risk-management strategies can certainly reduce the vulnerability of the urban poor to the devastating effects of disastrous events. Yet while piecemeal interventions can alleviate the suffering of victims of fires, floods and extreme cold, they largely ignore the root causes of disaster-vulnerability. Where urban residents live and under what

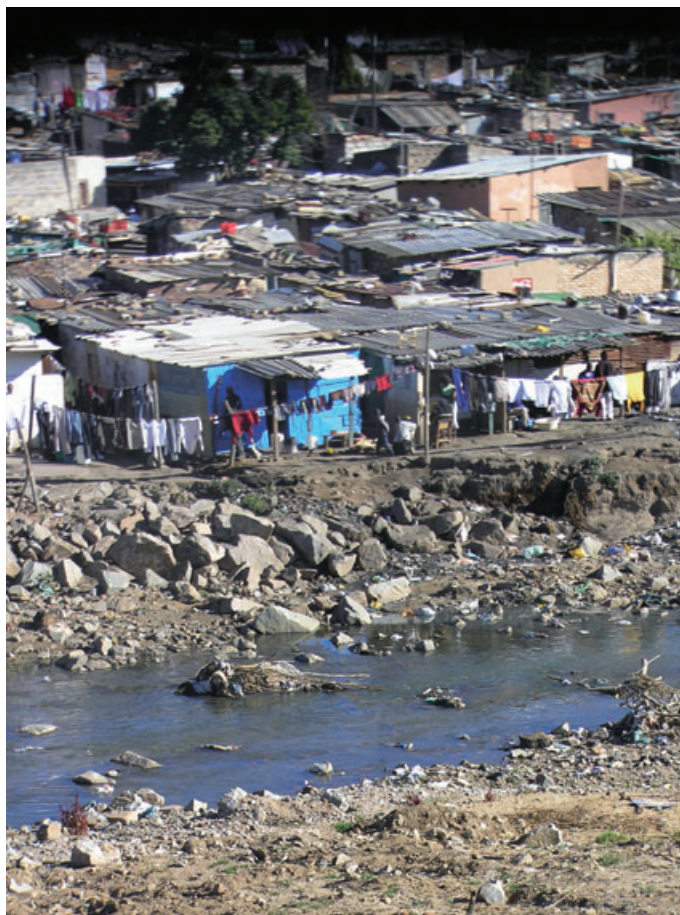


Figure 6 Shack settlements along the Jukskei River

conditions largely determines their exposure to risk. The structural underpinnings of susceptibility to unnatural disasters are linked to uneven patterns of social inclusion into the mainstream of urban life. Without regular work, decent housing and access to social services, the urban poor remain subjected to the deadly consequences of unnatural disasters.

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Résumé

Johannesburg est une ville divisée où habitants de la classe moyenne possédante et citadins pauvres vivent dans des univers d'existence séparés. Si l'augmentation régulière des lieux de distractions, centres commerciaux et enclaves privées sécurisées dans les banlieues Nord signe l'accès des citadins de la classe moyenne à la culture des villes candidates à 'l'échelon international', la prolifération d'implantations sauvages surpeuplées et dépourvues de ressources à la limite périurbaine traduit les caractères dystopiques d'un urbanisme sinistré. Les environnements à risque des implantations sauvages des squatters amplifient l'impact des catastrophes telles que les incendies ou

inondations, tandis que la conjonction entre modèles d'implantations à risque assortis de réglementations d'urbanisme et de normes de construction assouplies, préparation insuffisante à des calamités insoupçonnées et gestion inappropriée des crises, crée des risques artificiels totalement nouveaux. On ne peut attribuer ces désastres non naturels simplement à la malchance ou à la force destructrice de la nature. La vulnérabilité face aux catastrophes et l'exposition au risque ne se répartissent pas uniformément dans la métropole. En s'intéressant aux incendies qui ravagent régulièrement les bidonvilles existants, comme le township d'Alexandra dans la zone nord-est de Johannesburg, on peut mettre à jour une structure quasi invisible de marginalité et d'insécurité sociale qui constitue un état permanent dans la vie quotidienne des citoyens pauvres.