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## Uncertainty and urban life

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**“Uncertainty and Urban Life”  
Forthcoming in *Public Culture***

**Austin Zeiderman, Sobia Ahmad Kaker, Jonathan Silver, Astrid Wood**

Octavia is a city formed in the imagination of Cuban-born writer Italo Calvino (1974:75). It is a “spider-web city” hanging over a void between a pair of steep mountains, “bound to the two crests with ropes and chains and catwalks.” Getting from place to place requires great skill for there’s nothing but clouds below for hundreds of feet until you hit the valley floor: “You walk on the little wooden ties, careful not to set your foot in the open spaces, or you cling to the hempen strands.” The entire city is sustained by a mere “net which serves as passage and as support.” Rather than rising up from this foundation, everything else dangles beneath: “rope ladders, hammocks, houses made like sacks, clothes hangers, terraces like gondolas, skins of water, gas jets, spits, baskets on strings, dumb-waiters, showers, trapezes and rings for children’s games, cable cars, chandeliers, pots with trailing plants.” What could be more precarious, more uncertain, than such a city, where systems of sustenance and livelihood hang by a thread and the simplest journey might send one plummeting into the void? But here’s the twist: “Suspended over the abyss, the life of Octavia’s inhabitants is *less uncertain* than in other cities.” How could it possibly be so? Because Octavians are aware of that which elsewhere remains concealed. The essay concludes: “They know the net will last only so long.”

Calvino’s Octavia prompts us to consider uncertainty as an important dimension of urban life. In some respects, this has long preoccupied attempts to plan, build, and govern cities. Architects and urbanists of a modernist persuasion have often sought antidotes to that which cannot be known or managed: the “model” incarnates a vision of future possibility; the “zone” separates areas with ambiguous boundaries; the “census” enables calculations on which to base interventions; the “plan” offers an authoritative promise of the city to come. However, uncertainty has not only been a problem for professional urbanists but also for inhabitants of cities. Early theorists of the modern urban experience were deeply concerned about the social and psychological effects of city life. In opposition to what they assumed to be the regular, stable, and familiar routines of rural existence, the city was defined as a fundamentally unknowable and unpredictable environment. What Georg Simmel (1969) called the “mental life of the metropolis” was a response to the frenetic tempo, the unbounded multiplicity, and the infinite complexity of the modern city. If one responded to all external stimuli, he worried, “one would be atomized internally and come to an unimaginable psychic state” (1969:53). An attitude of impersonality, anonymity, and indifference was thought to be a defense against the fundamental uncertainty of modern metropolitan life. This duality in the legacy of urbanism—uncertainty as a feature of urban life, uncertainty as a target of urban intervention—leads us to investigate both situated experiences of uncertainty and attempts to mitigate and manage it.

Though the problem of uncertainty has its place in the history of urbanism, it has taken on new urgency of late. Urbanization, Neil Brenner observes, “has become one of the dominant metanarratives through which our current planetary situation is interpreted, both in academic circles and in the public sphere” (2013:85). Yet there is disagreement at the most basic level over how to describe the global urban condition and how best to analyze and interpret it (McFarlane 2011a; Brenner, Madden, and Wachsmuth 2011). As received paradigms of urban theory have come into question, there is a proliferation of analytical frameworks competing for dominance (Jacobs 2011; MacLeod and Jones 2011; Roy 2005; 2009b). If there is any consensus about twenty-first-century cities, it is around the impossibility of predicting what they will become. A

parallel situation exists in the realm of urban politics, policy, and practice. Beyond the perfunctory projection that “the future is urban,” there is no shared vision of how this future will unfold. As visions of urban futurity cede ground to tentative experiments in managing what cannot be confidently foreseen, governments and populations alike must orient themselves toward the unknown (Walker and Cooper 2011; Lakoff 2007). The currency of concepts like “preparedness,” “resilience,” and “sustainability” reflects an acceptance of future uncertainty as increasingly fundamental to contemporary urbanism (Amin 2013). With the widespread notion that we now live in turbulent times—economically, politically, and ecologically—uncertainty seems poised to be a defining feature and focus of urban theory and practice.

Whether present futures are objectively more uncertain than futures past is beyond the scope of this essay. Though we are inspired by those who have examined temporal transformations on a grand scale (Bauman 2006; Beck 2009; Luhmann 2005), we prefer to remain agnostic about such world-historical questions and to resist the temptation to naturalize uncertainty as an essential characteristic of urban life today. We nevertheless wish to respond to the theoretical and practical problem of uncertainty by placing it at the center of our frame of critical inquiry. In doing so, we draw upon a rich body of work across the social sciences. Science and technology studies teach us that uncertainty is a domain of knowledge and non-knowledge that generates controversies of authority and expertise (Callon, Lascoumes, and Barthe 2009) and “creates a demand for solutions to the ambiguity it perpetuates” (McGoe 2009:155). Governmentality studies direct us to the discourses and practices through which uncertainty is problematized and governed, and to how urban life is governed *through* uncertainty (Samimian-Darash 2013; O’Malley 2004). Studies of financial markets present us with a domain beyond the state in which uncertainty is productive and can be capitalized upon, through speculation and hedging (Zaloom 2004; LiPuma and Lee 2004). Urban studies draw our attention to how city dwellers in much of the world experience uncertainty as both an obstacle and an opportunity (Simone 2010; De Boeck 2011). Recognizing the pitfalls of shifting between these diverse perspectives on uncertainty—that it may be too much for one term to bear—we seek not to bring them together in a unified theory. We wish to exploit the polysemic nature of the concept in order to open up a complex field of analysis and bring together styles of thought usually kept separate.

In what follows, we present four cases that use uncertainty as a lens through which to examine the urban.<sup>1</sup> Although all the cases emphasize those aspects of cities and urban life that cannot be confidently known, anticipated, or managed, each focuses on a different dimension of uncertainty, locates it in a different city, and mobilizes different conceptual tools for making it visible. In Karachi, Pakistan, Kaker focuses on a securitized housing complex run by the military that promises to reduce the uncertainties of everyday life in a violent, conflict-ridden city. In Accra, Ghana, Silver concentrates on crises within the energy networks that supply the city, and how people respond to persistent infrastructural uncertainty. In Bogotá, Colombia, Zeiderman highlights the multiple levels on which the uncertain future saturates the present by focusing on

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<sup>1</sup> This collaborative project has been undertaken both collectively and individually. The conceptual framing emerged from a conversation about common threads running through our respective cases, after which we agreed that uncertainty was a way to describe our shared observations. The introduction was written by the first author in consultation with the other three. The collaborative endeavor began after all authors had concluded extensive field research in their respective sites. Yet data collected individually was re-analyzed collectively with a fresh eye. The empirical sections were written individually with feedback from other authors. The conclusion emerged from collective identification of cross-cutting themes. It was written primarily by the first author with substantive input from the other three.

efforts to govern potential threats in the informal settlements of the urban periphery. In Johannesburg, South Africa, Wood analyzes investment in transportation projects that promise universal applicability and predictable results as a response to uncertainty about the future of the post-apartheid city.

Our interest in uncertainty is inseparable from the locations in which we work. Karachi, Accra, Bogotá, and Johannesburg—like many cities of the global South—have long been understood as places that repeatedly frustrate the desire for certainty inherent to modernist urban planning, governance, and development (Chakrabarty 2002; Edensor and Jayne 2011). They have typically been seen to lack the laws, institutions, statistics, and boundaries on which to base rational, technical solutions to persistent urban problems. Because chaos, inconstancy, and unpredictability are often associated with urbanism in the global South, it would be easy to read our argument about the centrality of uncertainty to contemporary urban life as peculiar to these cities. This might tempt us to treat uncertainty as a synonym for poverty, informality, or disorder. Instead, we argue that while the dynamics we discuss may be less evident in the global North, they nevertheless confound the categorical divides of First and Third Worlds, global cities and megacities, modernity and development (Robinson 2006). Inverting the conventional trajectory of urban theory, which is often based on the cities of the North and then “applied” to the rest of the world (Roy 2009a), we ask what an examination of urban uncertainty in the cities of the South can tell us about contemporary urbanism at large.

Our initial conversations revealed parallels as well as disjunctures across our respective field sites. This suggested the need to avoid treating the “urban” as a distinct and bounded spatial type with common characteristics. Our comparative approach allowed us to remain grounded in the particular context of each city and to let each case illuminate different dimensions of our overarching concern (Robinson 2011). We chose not to apply a single conceptual framework to the four cases but to base our inquiry on a set of common questions: What uncertainties are in evidence throughout each city and how are they materialized in urban space? How is uncertainty produced, what work is it doing, and at what scale? What projects, both personal and political, does uncertainty enable or constrain and what responses is it generating? How is uncertainty lived, negotiated, and mobilized by differently positioned urban actors and what additional uncertainties are emerging as a result?

Together, these questions point to uncertainty as something that is both produced and productive—what we might call a dialectic of uncertainty in order to emphasize its dynamic, processual, and recursive nature. This is the main commonality across our four cases. Historically sedimented conditions of uncertainty lead to strategic attempts by distinctly located and unequally positioned urban actors to stabilize select elements of the urban milieu, which enables certain outcomes and constrains others while generating more uncertainties along the way. These uncertainties can never entirely be overcome, nor is overcoming uncertainty always the objective, since uncertainty can be advantageous for some and disadvantageous for others, a problem at one scale and a solution at another. While the following sections highlight the different ways in which this dynamic unfolds in specific locations, in conclusion we will return to additional parallels between our individual cases and to the task of transcending the particularity of each one. It bears restating that our ultimate goal is not to overcome the theoretical and practical uncertainties cited above, but rather to demonstrate the conceptual utility of analyzing uncertainty as a key dimension of the contemporary urban condition. We will now turn to the first of our empirical cases.

### **An Island of Order in Karachi**

Imagine living in a space administered by a non-democratic governing authority where permission to buy, sell, or rent property is based on background checks, conditions are imposed on free movement, entry is monitored and regulated by guards and CCTV cameras, and strict rules structure everyday life. This is the case of hundreds of willing residents of Askari III: a heavily securitized, walled, and gated housing complex for ex-military personnel and civilians in Karachi. They are drawn to such an authoritarian environment to counter uncertainties associated with everyday life in a city prone to outbursts of violence and infrastructural disruption.

For the twenty million residents of Karachi, the certainties of daily life hang in balance. Spontaneous breakdown and suspension of everyday provision of public goods such as water and electricity is common, caused by contests over jurisdiction amongst the numerous federal, provincial, and local governing agencies. A climate of fear also hangs over the city as residents frequently fall victim to kidnappings, robberies, and shootings in the absence of effective and responsive public policing. In many of Karachi’s neighborhoods, residents have responded by creating alternate systems to manage disturbances in everyday life and informal governance structures emerge to remedy everyday uncertainties of infrastructural disruption and insecurity. These may be resident committees and community associations or armed gangs and local militias. The residential enclaves they form are politically charged spaces that are often patronized by political bosses, and hence become embroiled in Karachi’s volatile vote politics. The number of favors bestowed to improve public services in a given area are usually predicated on its strategic political significance as an electorate, as well as the power wielded by the patron over local and national politics.

These processes are taking place all across the city. Karachi has morphed into an archipelago of enclaves, and enclavization has become a strategy to manage everyday life with minimal disruption. Enclaves exist in both planned and unplanned areas of the city and differ according to physical features, circulation patterns, and social demographics. However, all are privately securitized, exclusionary spatial communities governed through distinct juridico-political structures. Those living inside are subjected to a high degree of social control, and in this sense enclaves may be understood as a spatial manifestation of civic governmentality (Robins 2002; Roy 2009b). Ethnographic research in Karachi shows enclaves to be relational and dynamic spaces borne out of multi-scalar political alliances and negotiations. This makes enclaved spaces necessarily fluid, as their boundaries shift to include and exclude people based on the negotiated outcomes. Thus, enclavization exemplifies the productive capacity of urban uncertainty. It mobilizes what AbdouMalik Simone refers to as anticipatory urban politics, or “the art of staying one step ahead of what might come, of being prepared to make a move” (2010:62). The myriad actors working to manage uncertainty through alliances, coalitions, and associations amongst and between formal and informal governance institutions constantly shift position in order to pursue more satisfying outcomes (Simone and Rao 2012), especially to enlist allies who can help to manage crisis (Appadurai 2002). However, such process are political in nature and wrought with tensions and conflict (Budhani et al. 2010), thus making uncertainty a constant feature of everyday urban life in Karachi.

Askari III is one of many such enclaves in Karachi. It is settled on land which falls under the jurisdiction of the Karachi Cantonment Board (KCB), a remnant of colonial administration originally established to create a residential space to incorporate civilians ancillary to the British military. Rooted in the French word *canton*, cantonment refers to “a small part or a political division of the country” (Onions 1966:142). This is an apt definition of the political space of

Askari III: a space of exception suspended from the sovereign authority of the democratically elected City District Government of Karachi (CDGK). The Cantonment Board is exempt from the legal building codes and by-laws which regulate the areas under the jurisdiction of CDGK, and has independent responsibility over infrastructure provision, municipal functions, and land development. Cantonment areas are also heavily securitized. Circulation of outsiders is restricted, and the area is policed by both public and private security forces. Despite this physical and politico-legal separation, there is a material interconnection between the two governing bodies. The cantonment’s infrastructure is connected to the CDGK’s technical systems beyond the enclave. This makes the enclave an exceptional space that is both separate from and dependent on the wider city.

Residents of Askari III express frustration towards the restrictive regulatory environment within which they live, but feel that it offers them security and stability impossible outside its walls. As one resident puts it: “I just don’t like this kind of life, but what do you do?... Last week, one political leader said something to another and that was it. No one could step out anymore because there was chaos in the streets. The kids just slept most of the day but in the evening I thought, thank God, at least I can go out and take a walk!” Yet living in a city where the Taliban regularly attacks state-military structures, residents also paradoxically feel more insecure living in Askari III: “We are all potential targets for terrorists—especially living in Askari... but we also know what the situation of the city is.” For residents, the uncertainties associated with everyday violence and infrastructure disruption in Karachi are less tolerable than the threat of a terrorist attack, which they view as an exceptional event. The paradox of security and insecurity is overruled by the expectation of certainty in everyday life which extends beyond safety to include public amenities. Askari III promises to be a secure island of order in a city characterized by disorder. Preferential legal agreements between the Cantonment Boards and public utility companies grant Askari III residents extraordinary rights over water, gas, and electricity provision. The agreement promises uninterrupted provision of utilities at subsidized rates, prioritizing cantonment areas at the cost of other areas. The legal framework has been shaped by successive military dictatorships to favor military enterprises.

The relationship between residents of Askari III and the state, and their desire to live in a military compound, are both indicative of the political history of Pakistan. Sana’s sentiments are echoed by many of her neighbors in Askari III: “The police are a source of insecurity rather than security, the government is extremely corrupt—current events have completely lifted my trust off from these institutions. The only time the government runs properly is when it is under the Army’s baton!” In the 66 years since independence, the military has ruled the country for more than 30 years. In this period, it has consolidated as an organization of major geo-strategic and geo-economic value (Siddiqi 2007). The Army is trusted to deliver prosperity and security due to its historical success as an institution. A democratic government is seen as messy: political negotiations between coalition parties result in perpetual uncertainty over who holds power. Civil conflict often ensues, and the government loses credibility and legitimacy. This impacts systems of governance at the municipal level, and results in infrastructure disruption, economic decline, and urban insecurity. Askari III residents remember military rule fondly as a time of predictability, security, and prosperity. Despite suspending the rule of law and declaring a state of emergency during its reign, the military is trusted to deliver a sense of stability to everyday life.

Although enclavization offers a semblance of certainty and security, it creates relational conditions of uncertainty and insecurity in the rest of the city. By altering the relationship

between citizens and the state, enclaves such as Askari III upset the delicate political balance in Karachi. Exclusive rights over urban infrastructure and public utilities coupled with increased security inside the enclave displace costs, shortages, and disruptions on those living outside. In turn, neighborhoods outside cantonment areas also resort to enclavization as a strategy to respond to these urban crises, and urban fragmentation multiplies. In other areas, resident associations emerge as powerful non-state actors who weaken the legitimacy of the government by mediating between citizens and public agencies. As traditional urban governance structures are twisted, residential enclaves materialize as spaces that have potential to restructure urban power and politics. Enclavization is therefore a self-perpetuating phenomenon linked with urban conflict and crisis. Consequently, the conditions of certainty promised by enclaves such as Askari III generate further uncertainty beyond their borders.

### **Navigating uneven energy disruption in Accra**

The cascade across the electricity system is visible from afar as I approach Ga Mashie, a poor neighborhood in central Accra. A light goes out in one household and then another quicker than can be followed. The music from a bar ceases and bright alleys plunge into darkness as the agency of the municipal power network asserts itself over the area (Bennett 2005). This is the third time this week that the neighborhood's electricity supply has been disrupted. Such failures reflect a periodic crisis in those parts of the city without access to the spluttering generators that hum ubiquitously in middle-class areas. In Ga Mashie, the temporality of disruption is stochastic and recurrent, the flow of electricity never guaranteed. Residents maneuver around shifting infrastructure conditions to navigate the uncertainties of everyday life.

These electricity disruptions are produced through a multi-scalar crisis in energy production caused by ongoing generation problems at Akosomobo Dam. The energy crisis in Accra can be understood as a metabolic process (Gandy 2004; Keil 2005; Swyngedouw 2004) involving flows of capital, increasingly arid conditions in the Sahel, their impact on water flows across the Volta Water Basin, and the reduced flow of water into this hydro-electric facility. At other times, poverty is what affects households' ability to sustain electricity supply. The installation of new pre-payment technologies compounds energy deprivation as low-income residents are often unable to afford paying in advance for this most vital of urban services.

Multi-scalar metabolic processes and more immediate causes of disruption produce an inability to anticipate the flow of electricity in the neighborhood. In Ga Mashie, conditions of disrepair and inaccessibility characterize the everyday energy geographies of the neighborhood. Gone are promises of a better future through networked services—the (Afro) modernist infrastructural ideal (Graham and Marvin 2001) around which Ghana's first president, Kwame Nkrumah, sought to unite the newly independent nation. Despite architectural and infrastructural remainders from this more confident era, many of Accra's residents are left with the legacy of Structural Adjustment Programs (SAPs) of the 1980s, under-invested infrastructure, and wider conditions of poverty. Yet people do not simply cope with the city's unpredictable energyscape. They find ways to incrementally navigate it by seeking collaborative possibilities at various intersections across and beyond the energy infrastructure system.

A drift around the neighborhood reveals the multiple intersections between people and infrastructure in Accra's low-income, networked neighborhoods. Hawkers sell fuel for lamps to use during network disruption, creating new ways to earn a few *cedis* (Ghana's currency). Boys transform firewood into charcoal, providing material for cooking and generating some *cedis* for pre-paid electricity credit. Electricians keep meter readings low so households can sustain light

in the evening for children’s homework. A woman provides a charging point for mobile phones, which are vital in navigating the uncertainty around the next corner. A man tinkers with a broken transistor radio that used to provide news of network disruption, warning residents of the next load-shedding event. Others come together to hook up a new shack to a light source giving a sense of security and belonging to recent settlers. Elsewhere the Electricity Company of Ghana (ECG) office closes because the woman who staffs the counter is ill, generating considerable disruption for the rest of the day. Local residents must then put off their electricity credit purchase or travel to the next payment office twenty minutes away. These patterns may be similar the next day, but the dialectical urbanism will be in flux again (Simone 2004a) as residents incrementally find new ways to inhabit the city (De Boeck 2011).

While conditions of uncertainty can produce conflict, collaboration is the norm. Temporary intersections of interests around sustaining the energy infrastructures of the area combine to navigate network disruption, energy deprivation, and the daily task of getting by and getting on (Simone 2004b). As such, the installation of a new street light is financed by a local bar in anticipation of increased revenues, and an electrician with a newly opened charging point undertakes the labor without cost. Two young men from the opposite compound are sent to fetch wiring, content that the street light will provide their household with free evening light. Finally, the head of the local ECG office waves away concerns about the status of the street light, understanding its importance in generating income and knowing that he will receive a beer or two later in the week. At these intersections of people and infrastructure—what Simone (2004b) terms “people as infrastructure”—collaborative processes of urban learning (McFarlane 2011b) allow residents to actively reshape the network and to incrementally improve, test, and experiment with ways to address conditions of energy poverty and the uncertainties of daily life across the grid. The peripheral nature of urban life for many residents in Ga Mashie makes them vulnerable to multi-scalar crisis and energy deprivation but it also produces conditions of possibility (Loftus 2012) and new geographies of the city yet to come (Simone 2004a). As Filip De Boeck notes in Kinshasa, this form of urbanism “offers [the urban dweller] a considerable freedom to capture the sudden possibilities opened up by unexpected occasions that are generated by the synergies and frictions of urban life” (2011:272).

The geography of disruption and failure across the energy infrastructures of Accra reveals more than everyday responses of the urban poor to such dynamics; it also highlights the ongoing, although changing conditions of splintered urbanism (Graham and Marvin 2001) in the city. Thus, the energy crisis and associated insecurities generate a range of different but connected responses in other areas, demonstrating how uncertainty is problematized, capitalized, and reshaped through relationships of class, power, and access. As in Karachi, a boom in middle-class urbanization is increasingly visible across the city’s landscape. In Accra, energy-intensive concrete suburbias are implicated in the production of crisis as soaring demand puts further stress on the electricity system while these households use generator technologies to insulate themselves from the implications of the urbanization of energy demand. Furthermore, frequent disruption and crisis across the city’s energy infrastructure creates new opportunities for capital accumulation. Global equity companies and other real estate investors seek financial returns by selling infrastructural security (Grant 2009). One outcome is the growth of post-networked urbanism and premium network spaces (Coutard and Rutherford 2011). This is increasingly visible as newly built neighborhoods offer life without disruption through off-grid generation or new technologies such as solar panels. These new energyscapes may lower demand, but they

also inhibit future investment in the public network, create further divisions across infrastructure, and mediate the uneven distribution of (energy) insecurity.

The multiple ways in which network disruption is produced, managed, and negotiated across and beyond the energy network provide insight into broader dynamics in Accra. As Colin McFarlane and Jonathan Rutherford argue, “the politics underpinning urban infrastructural transformation are rarely more evident or visible than in times of crisis or rupture” (2008:368). Understanding the distribution of uncertainty across Accra reveals the political nature of urban infrastructure and the role it plays in mediating social life.

### **Zones of uncertainty in Bogotá**

A massive landslide marked the beginning of the end for Nueva Esperanza, a settlement built by rural migrants and refugees on the steep hillsides of Bogotá’s urban periphery. Before the catastrophe, settlers had gotten used to negotiating uncertainty on a number of levels. The streets had been controlled by *autodefensas* (paramilitary groups) known for conducting *limpiezas* (social cleansings) to rid the neighborhood of those they deemed *desechable* (disposable). Death threats were leveled at families who refused to collaborate or pay for protection. There were open-air drug markets, addicts robbing houses to support their habits, and shootouts between rival gangs competing for territory. As Joaquín, a former resident, told me: “That’s how one lived in Nueva Esperanza; always fighting to survive.” But daily life in Nueva Esperanza also involved a perpetual struggle with the material conditions of the settlement. Tubes carrying pirated water often burst, the leaks then saturating and destabilizing the ground. Wooden posts holding up roofs would rot and occasionally fall down. The only way to dispose of wastewater was to dump it into the open stream bordered by houses on either side. People frequently got sick during downpours rains as contaminated water flooded their homes. When a hillside finally collapsed, taking one-hundred and twenty-nine houses with it, the municipal government declared a state of emergency and the process of evacuating the neighborhood began.

Similar stories are found throughout the urban periphery, where threats of crime and violence intermingle with hazards like landslide and flood. Bogotá’s highly uneven landscape of insecurity, both human and environmental, is the product of twentieth-century urban development patterns. Between 1950 and 2000, the population exploded from just over 700,000 to about seven million, and much of this growth took place in informal settlements on the mountainous urban periphery. Peasants from the countryside arrived in the capital city, either seeking economic opportunity or fleeing violence. Upon arrival, they settled in centrally located *inquilinos* (tenement housing), but as exiting options dwindled they gravitated to the hillsides of the city’s southern periphery. *Urbanizadores piratas* (pirate urbanizers) began to appropriate territories previously exploited for construction materials, subdividing them into small plots and selling them without legal title. The state had neither the interest nor the ability to regulate the urbanization of the periphery; in fact, political parties often facilitated ad-hoc urbanization in exchange for popular support. Settlers built their own dwellings using rudimentary construction materials on what was already precarious terrain. Conditions of compounded precarity are, as Mike Davis puts it, “poverty’s niche in the ecology of the city” (2006:121-22). For the many living in settlements like Nueva Esperanza, anticipating potential threats has become a normalized routine of daily life.

Managing future uncertainty is not only an urgent problem for the urban poor in Bogotá, but also for the state. Since the late 1980s, the municipal government has been experimenting

with techniques for securing the city against a range of potential threats. In 1989, the Colombian legislature enacted a broad reform of urban government, which obligated municipalities with over 100,000 inhabitants to create inventories of “zones of high risk” for environmental hazards and begin mitigation work or relocation programs in these areas. In 1994, Bogotá’s mayor, Jaime Castro, directed what was then the Office of Emergency Prevention and Response to analyze the distribution of disaster risk across the city. The municipal housing agency (the Caja de la Vivienda Popular) was later put in charge of a resettlement program for families living in high-risk zones, the majority of which were located in peripheral hillside settlements like Nueva Esperanza. In the mid-1990s, the imperative to secure Bogotá against potential threats extended beyond the domain of environmental hazards when Antanas Mockus was elected mayor in the wake of a barrage of homicides, political assassinations, crime waves, and bomb attacks. Searching for innovative strategies to confront rampant insecurity, Mockus found inspiration in Cali, Colombia’s third largest city, where the city government was approaching outbreaks of crime and violence as if they were emerging infectious diseases. Based on this model, Mockus set up a system for analyzing existing crime data in order to identify risk factors that could be used to predict when and where future violence would be likely to occur. Uniting these distinct if overlapping approaches to governing Bogotá was the problematization of the city as a security concern—as a space of risk. Over the past two decades, multiple techniques have been devised with which to govern (and govern *through*) uncertainty.

Once brought into novel governmental frameworks, the precarious conditions of the urban periphery could become politically and economically productive. In the case of housing, the technical rationality of risk management led the state to limit its responsibility for providing shelter to the urban poor. The constitutional right to *vivienda digna* (decent housing) shared by all citizens only applied to populations deemed highly vulnerable to environmental hazards. Nevertheless, the declaration of “zones of high risk” thrust thousands of settlers on the urban periphery, previously marginal to formal economic and legal institutions, onto privatized markets for housing, credit, and utilities. Since resettlement was ostensibly voluntary, however, the government had to educate members of this population to become rational, responsible, and prudent; that is, to desire and actualize their own relocation. In the process, they could become homeowners, debtholders, and consumers. Through the technique of risk management, the imperative to govern uncertainty facilitated recognizably neoliberal forms of capital accumulation, institutional reform, and subject formation. Although their profitability pales in comparison, these efforts to render uncertainty productive are analogous to financial instruments, such as derivatives, created to commodify contingency (Cooper 2010; LiPuma and Lee 2004). Here and in the case of Accra we find evidence of what De Boeck sees as the parallel relationship between precarity and profitability in an urban context: “Daily life in Kinshasa is constantly punctuated by uncertainty, risk, provisionality, and the continuous hedging of bets, and these qualities also form the city’s main asset, and generate its main financial opportunities, precisely because both city and capital share the same fundamental characteristics” (2011:279).

However, future uncertainty does not always work in the interest of political and economic elites or necessarily produce a post-political society ruled by technocratic experts (Swyngedouw 2010). The uncertain future can also be a terrain of political engagement on which people in the margins of the city pursue a better future. For example, in Bogotá, the governmental imperative to protect citizens against environmental hazards entitles vulnerable populations to housing subsidies. Some view this as an illegitimate exercise of state power or see it as too incremental to make a difference. But many recognize that their ability to demand state

beneficence—to some degree, their very status as legitimate political subjects—is predicated on the degree to which their lives are in danger. Since probabilistic calculations of risk and vulnerability are contingent and changeable, they are continually negotiated by government technicians and the inhabitants of high-risk zones. As such, those outside the designated boundaries of these zones regularly petition the municipal government to recognize that they, too, are vulnerable to environmental hazards. It is often by making themselves visible, individually and collectively, as lives at risk that the urban poor engage in political relationships with the state (Chatterjee 2004). When security is the orienting telos of government—that is, the political rationality shaping the state’s authority over and responsibility to its subjects—future uncertainty becomes the ground on which the urban poor struggle for political inclusion, recognition, and entitlement. Simone and Rao identify a similar political dynamic: “If no actor at any level can get a real handle on where [the city] is going, then an urban politics must try to eke out productivity from the prolific spaces of uncertainty” (2012:331). It is under these conditions, they argue, that a “constantly mutating majority” attempts “to secure for themselves the ongoing possibility to carve out a viable life” (2012:316).

In Bogotá, uncertainty is not simply an experiential reality of the urban poor, a problem for government to manage, an economic opportunity to be pursued, or a terrain of popular political engagement. It is all of them at once. Uncertain futures saturate the present, enabling and disabling a range of actions and reactions from the state and from the urban population at large.

### **Uncertain Transport Futures in Johannesburg**

In January 2013, the City of Johannesburg, formal bus companies, and informal minibus taxi operators signed an agreement to jointly manage the second phase of Johannesburg’s Rea Vaya bus rapid transit (BRT) system. BRT is a mode of urban public transport that combines the high-quality and speed of a rail system with the affordability and flexibility of a bus network. It was first proposed in Johannesburg in July 2006 and, just three years later, Rea Vaya Phase 1A became the first full feature BRT on the African continent, promising to inaugurate a new era in South African public transport. Now six years after BRT was initially adopted in Johannesburg, there is still only one 25.5-kilometer route moving just forty-five thousand persons each weekday. This delayed implementation can be partly attributed to prolonged disagreement among the paratransit operators who have customarily provided transport along the 18.5-kilometer route between the former township of Soweto and the central business district.

The story of BRT in Johannesburg reflects the spatio-political challenges faced by the transport sector in the post-apartheid city. For the most part, the urban poor rely on a politically powerful and under-regulated fleet of overcrowded, poorly maintained minibus taxis that operate irregular services. Taxi riders are often stranded at street corners waiting for the elusive white van whose unpredictable arrival introduces new dangers in their so-called “coffins-on-wheels.” BRT was adopted to provide safe, affordable, and reliable transport services to all Joburgers, in particular the working poor, while simultaneously formalizing the obstreperous taxi industry. Its larger purpose was to address the city’s historical spatial divide along racial lines and post-apartheid splintering urbanism. Rehana Moosajee, Member of Mayoral Committee for Transport in Johannesburg sees BRT as a means to restore dignity to the residents of Johannesburg: “part of the problem with the taxis...is that people are treated like sardines... We always tried to see the bigger picture, that of respecting the dignity of commuters and of a transformed public transport system.”

Uncertainty now hangs over a project that was once seemingly infallible. Johannesburg’s Rea Vaya was modeled after the achievements of BRT in Bogotá (Colombia) and Curitiba (Brazil) and Phase 1A opened just sixteen months after political leaders and technical experts learned of it. Based on its success elsewhere, Johannesburg officials anticipated high ridership on an unsubsidized system operated by incorporating existing paratransit operators. However, BRT rollout has slowed as both bus and taxi operators remain hesitant to relinquish their control over the transport sector. A former representative of the taxi industry and now a senior manager of PioTrans, the operating company for Rea Vaya Phase 1A, underscores his initial apprehension about formalizing the taxi industry with reluctance to act alongside government officials and the threat of violence by other operators. Meanwhile, a senior director of Putco, the largest bus company in Gauteng Province, attributes his hesitation to competition between paratransit operators for passengers and revenue. These concerns resonate with the frequent assurances by city officials and from international proponents of BRT that it would be both viable and socially just while simultaneously reflecting Johannesburg’s motto: “A World Class African City.”

Johannesburg is a sprawling city of automobile congestion, broken “robots” (traffic lights), and aggressive taxis cutting across four lanes and then stopping suddenly to load passengers before zooming off. Built atop of a maze of underground gold mining shafts, the city cannot support an underground transport network. Urban expansion was initially hastened by at-grade transport services: horse-drawn streetcars were introduced in 1891, electric trams operated from 1906 to 1961, and trolleybuses ran from 1936 to 1986. Since then, city officials and engineers have struggled to propose an alternative mass-transit solution. An informal minibus taxi industry emerged after deregulation in 1986 and subsequently expanded to dominate service routes between the townships and the city. When BRT arrived in 2006, the existing rail network was overwhelmed by passenger demand and its fixed lines were inadequate in the expanding metropolis. Bus systems were similarly incapable of matching the combination of extraordinary demand and low-density urban form. The nature of Johannesburg’s transport uncertainty has been prolonged. It did not irrupt through shocks of extraordinary events but was generated through the ordinary and persistent stresses of relying on deficient urban transport networks. The “potential uncertainty” (Samimian-Darash 2013) of the constantly-approaching-but-never-arriving urban transport crisis explains the rapid adoption of BRT and the persistence of Johannesburg policy actors to resolve paratransit operators’ apprehension about the second phase.

Weak and ineffective government strategies to reform public transport, formalize the taxi industry, and densify the city are amongst the major obstacles confronting post-apartheid urbanism in South Africa. Policy actors describe an almost doomsday scenario filled with anxiety and indecision, calling it a “commuter crisis” akin to the global financial crisis and explaining that something must be done to reform and improve mobility opportunities. These arguments are useful in understanding how problems, policies, and politics converged in Johannesburg to sanction BRT as *the* solution. BRT was introduced as a way to guarantee safe, predictable transportation for those accustomed to riding in minibus taxis. Since BRT was touted as a low-cost, high-capacity solution to the city’s urgent transport predicament, other solutions were not sufficiently investigated. Recall that prior to the adoption of BRT, transport officials were in the process of developing the Strategic Public Transport Network (SPTN), an attempt to manage informal transit services by creating comprehensive routes, timetables, and signage for users. In 2006 however, the SPTN was scrapped in favor of the grander BRT network. The policy mobilities literature (McCann and Ward 2011) is useful here for understanding the

process by which BRT was adopted in Johannesburg because of its auspicious success elsewhere. The assurance of certainty is perhaps a vital precondition for investing in major infrastructure projects like BRT.

BRT is a particularly impressive intervention in Johannesburg: the Rea Vaya bus follows a schedule; passengers pre-pay using cashless cards; and information is clearly posted at purpose-built glass and concrete stations. This vivid materiality suggests a sounder alternative, replacing the unpredictability of waiting at a street corner for an unreliable service. However, certainty is not always associated with the size and scope of a project. For instance, a previous attempt to manage the informal taxi industry addressed the taxis themselves and made no substantive improvements in the overall quality of public transport services. The national Taxi Recapitalization Program (TRP) was first announced in 1999 as a strategy to transform and regulate the minibus taxi industry by replacing old, tattered vans with modern, shiny vehicles. TRP introduced a material certainty by reducing the safety hazards commonly associated with the inadequately maintained vehicles. The program was for the most part a fruitless exercise—unlicensed drivers still drove recklessly, selectively picking up passengers on impulse, and riders continued feeling unsafe for the duration of the journey. Accompanying the promises of certainty, major infrastructure projects also elevate suspicion and mistrust through the usual difficulties associated with implementation. McFarlane and Rutherford (2008) argue that infrastructure often becomes a site of negotiation, contestation, and struggle. Thus, materiality can reproduce uncertainty within its sureness.

It is not surprising that the implementation of BRT is hardly straightforward given the transformative power it is imagined to have in the South African city. BRT promises to provide Joburgers with an affordable, reliable and safe transport system, taxi operators with formalized and stable employment, and buses with viable routes. It also conjures up images of equality and dignity for all Joburgers, moving freely and efficiently through urban space regardless of skin color or income, in a city free from the grip of informality, and instead managed by an efficient and capable municipal government. In spite of the delayed implementation of Rea Vaya’s second phase, BRT remains a harbinger of the post-apartheid urban future.

## Conclusion

Our opening reference to Calvino’s *Octavia* prompted us to examine the role of uncertainty in contemporary cities. In the course of our analysis, however, this imaginary place became more than a suggestive provocation. It began to serve as a figurative depiction of the multiple levels on which uncertainty shapes the organization and inhabitation of cities. Calvino’s illustration of the precarious infrastructure supporting life in *Octavia* resonated with our analysis of vital systems (such as electricity, housing, and transport) whose form and function are far from stable. His image of a city held together by wooden ties and hempen strands, dangling over an abyss, approximated our focus on the materialization of uncertainty in urban space. His emphasis on everyday tasks, always undertaken with caution, resembled our attention to what people do when basic necessities and routine activities cannot be taken for granted. The fact that these conditions are in plain sight in *Octavia* pointed us to visibility as important to whether uncertainty can or cannot be negotiated. And Calvino’s paradoxical insight—that awareness of *Octavia*’s impermanence makes life *less* uncertain there than in other cities—mirrored our observations about the often contradictory outcome of quests for predictability, security, and certitude.

Octavia only takes us so far. Drawing our four cases together revealed a number of themes that are absent from the figurative city depicted by Calvino. Foremost among them was the observation that uncertainty crosses multiple levels and scales. It may be tempting to locate it solely within everyday struggles for survival among the urban poor. It is equally possible to see it as a problem limited to the techno-political domain of urban planning, development, and governance. Rather than focusing exclusively on any one level, we used uncertainty as a lens through which to examine the urban from a variety of perspectives. In Karachi, we focused on members of the urban middle class living in a heavily securitized residential compound administered by the military. In Accra, it is households in a poor but networked neighborhood who most strongly experience daily fluctuations in energy supply. In Johannesburg, it is the policymakers in charge of transportation infrastructure who seek answers to a future in question. In Bogotá, uncertain futures saturate the present on multiple levels at once. This perspective allows us to examine empirically the different orientations to uncertainty within each case and to connect analytically across cases. Although such a view is not always available to individual actors, neither is it the exclusive domain of the analyst. Our informants often highlighted multiple orientations to uncertainty within the same city; our task was to bring them together toward a broader understanding of how uncertainty shapes urban life.

Yet uncertainty is not a generalized condition that is evenly distributed—on the contrary, all the cities in which we work are deeply divided and unequal. As a result, differently positioned and empowered urban actors with widely divergent resources and forms of capital mobilize different tactics and techniques in response to different forms of uncertainty. Set against the modernist ideal of a politically unified, socially equal, and infrastructurally cohesive city, these responses reflect conditions of social and spatial fragmentation. Although unequally spread according to hierarchies of power and privilege, uncertainty frequently crosses social and spatial divides, occasionally uniting actors around a common problem or in pursuit of similar objectives. Weaving these different dynamics together allowed us to demonstrate how uncertainty becomes an active force shaping the city and everyday life within it.

All of our cases highlighted practices of seeking out, aspiring to, and searching for ways of dealing with the unpredictable and unstable dimensions of urban existence. Without presuming that certitude is an essential human need, we recognized the seductive power of the promise of a life free from the likelihood of blackouts, the threat of violence, the possibility of landslide and flood, or the unpredictability of democratic deliberation. However, even when solutions to uncertainty are found, there is rarely a final resolution or fixed point of closure. The situations we described are open-ended and uncertainty is rarely if ever eradicated from the urban milieu; rather it is managed, displaced, deferred, reconfigured, or reproduced. Recall the observation that uncertainty is processual and relational: strategies for reducing the likelihood of energy blackouts in one Accra neighborhood increase their likelihood in another; the relocation of slum dwellers in Bogotá to protect them from one kind of threat exposes them to other forms of vulnerability elsewhere; the creation of an enclave in Karachi destabilizes structures of governance in other parts of the city. Official and popular responses to uncertainty often attempt to create boundaries—spatial and temporal—around events, conditions, behaviors, objects, and groups. But bounding uncertainty is not the same as reducing or removing it. The phrase “governing *through* uncertainty” highlights that, in the domain of urban governance, techno-political action is not necessarily paralyzed by that which cannot be calculated, predicted, or fixed. The same insight emerges from our approach to uncertainty as productive. In Johannesburg, uncertainties about how to provide public transport have a specific history but

they also play a role in shaping the conditions of possibility for the future. Uncertainty gives rise to novel urban configurations, transforming the conditions of possibility in the city while generating new forms of urban life and livelihood.

There are at least two reasons why we should not romanticize the openness of uncertain urban futures. First, because we must not lose sight of the precarious conditions in which many city dwellers reside. True, the poor in Bogotá and Accra may relate to future uncertainty as a terrain of political possibility or as a field of creative collaboration. But unpredictable electricity supplies and heightened landslide risks also index material conditions of protracted poverty and entrenched marginality. Even in Karachi, where middle-class residents use their resources and connections to seek protection within the confines of a walled compound, fears and stresses continue to haunt their daily routines. Uncertainty enables some futures at the same time that it forecloses others. Second, the social and political openness of uncertainty has its economic twin, which usually results in material benefits for select groups. From investments in exclusive off-grid suburban developments in Accra to taxi operators delaying the extension of the BRT system in Johannesburg, uncertainty produces opportunities for generating profit. Just as investment instruments like derivatives make it possible to capitalize on contingency, fluidity, and unpredictability in financial markets, other techniques for managing uncertainty in an urban context convert these conditions into forms of value that can be commodified and exchanged. In Bogotá, risk management programs aim to protect the lives of vulnerable citizens at the same time that they facilitate the creation and expansion of privatized markets for housing, credit, and services. By structuring flows of capital in and out of the urban environment, uncertainty produces economic opportunities and shapes geographies of investment and disinvestment across the city. Again, we see that urban uncertainty is not always a problem to be solved or a disorder to be corrected.

Our final observation is about the degree to which uncertainty has recently become a feature and focus of urban theory and practice. On a theoretical level, universalist paradigms have been thoroughly unsettled and in their stead we find a range of analytical frameworks offering fragmentary perspectives on the urban. On a practical level, grand visions of urban futurity are disintegrating into tentative, localized experiments focused on eventualities to be avoided rather than pursued. This suggests that uncertainty has become internal to ways of analyzing and interpreting cities as well as to ideas of how to create the cities of tomorrow. We have not tried to resolve this theoretical and practical quandary by proposing a new urban theory or a new vision for what cities should aspire to become. Rather, we have placed uncertainty at the center of our frame of critical inquiry and examined its influence on how contemporary cities are planned, built, governed, and inhabited. If uncertainty is important, perhaps even increasingly so, to how the urban is imagined, organized, and lived, then the task of analyzing its analytical and political potential is now more urgent than ever.

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## **Abstract**

This paper is the outcome of collaboration between researchers studying various aspects of urban governance (energy, disaster, security, and transport) across cities of the global South. The authors argue for the analytical utility of placing uncertainty at the center of discussions about how contemporary cities are planned, built, governed, and inhabited. This is demonstrated through case examples that examine uncertainty as something produced by historical conditions and productive of future possibilities. Each author offers a concise case study that examines a different dimension of uncertainty, locates it in a different city, and mobilizes different conceptual tools for making it intelligible. In Karachi, Kaker focuses on a securitized housing complex run by the military that promises to reduce the uncertainties of everyday life in a violent, conflict-ridden city. In Accra, Silver concentrates on crises within the energy networks that supply the city, and how people respond to persistent infrastructural uncertainty. In Bogotá, Zeiderman highlights the multiple levels on which the uncertain future saturates the present by focusing on efforts to govern potential threats in the informal settlements of the urban periphery. In Johannesburg, Wood analyzes investment in transportation projects that promise universal applicability and predictable results as a response to unpredictable transport services and uncertainty about the future of the post-apartheid city. The authors conclude by discussing parallels and disjunctures in how uncertainty shapes urban life in each city.

## **Authors' biography**

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