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## On shaky ground: the making of risk in Bogotá

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***Abstract***

How does risk become a technique for governing the future of cities and urban life? Using genealogical and ethnographic methods, this article tracks the emergence of risk management in Bogotá, Colombia, from its initial institutionalization to its ongoing implementation in governmental practice. Its specific focus is the invention of the “zone of high risk” in Bogotá and the everyday work performed by the officials responsible for determining the likelihood of landslide in these areas. It addresses the ongoing formation of techniques of urban planning and governance and the active relationship of urban populations and environments to emerging forms of political authority and technical expertise. Ultimately, it reveals that techniques of risk management are made and remade as experts and non-experts grapple with the imperative to bring heterogeneous assemblages of people and things into an unfolding technological domain.

## ***Keywords***

Risk, security, cities, urban governance, environment, hazards, Bogotá, Colombia

## ***Introduction***

In this article, I examine the emergence of risk as a technique of urban planning and governance in Bogotá, Colombia. This local story offers insight into a general pattern in which the informal settlements that predominate in cities of Asia, Africa, and Latin America, along with the populations inhabiting them, are brought into novel governmental frameworks. It also reflects a broader phenomenon, whereby techniques of risk management and other mechanisms of “securitization” are emerging across a range of apparently disparate domains in both the global North and South as essential elements of “good governance.” According to Mike Hodson and Simon Marvin (2010, page 131), the rise of “urban ecological security” represents “a paradigm challenge to our conventional understanding of contemporary urbanism.” To understand these widespread transformations, this article bridges the gap between the field of urban studies and the literature on the political technologies of risk and security. The city of Bogotá provides an especially good vantage point from which to examine how risk becomes a technique for governing the future of cities and urban life.

Between 1950 and 2000, the population of Bogotá exploded from just over 700,000 to about 7 million (DANE, 1957, 2005). Much of this population growth took place in the southern half of the city and led to the growth of informal settlements on the mountainous urban periphery. By some estimates, this region of Bogotá is one of the largest agglomerations of urban poverty in the world. When the municipal government began conducting technical studies of environmental hazards in the late 1990s, the highest concentration of families in “zones of high

risk” was in this area (Morales, 2005). In fact, over 50% of the 10,715 properties located in risk zones in 2008 were in Ciudad Bolívar—the largest and poorest of Bogotá’s twenty localities (Camara de Comercio de Bogotá, 2007; Poveda Gómez, 2008). The imperative to relocate families from “zones of high risk” has focused on this area; from 2004 to 2006, 90% (1,239) of the households resettled by the government were from this locality alone (Caja de la Vivienda Popular, 2006).

How did the poor in Bogotá come to inhabit landscapes of risk? This situation can be understood in at least two ways. The first is what I would call the received narrative.<sup>1</sup> Since the mid-twentieth century, hundreds of thousands of peasants from the Colombian countryside have either migrated to the capital city seeking economic opportunity or have been displaced from their land by paramilitaries, guerrillas, or the army. While peasants had once been embedded in the social institutions of rural areas, such as the Catholic Church and the *hacienda*, they have become increasingly uprooted in the past half decade as economic restructuring and political violence radically transformed the country. Upon arriving in large numbers in Bogotá, they first settled in rented rooms in centrally-located tenement housing (*inquilinos*). But as the existing housing supply quickly ran out, they began to gravitate to the hillsides of the city’s southern periphery.

From as early as the nineteenth century, these lands were exploited for construction materials. Tunnels and quarries had been dug into the deforested slopes in order to extract the gravel, rock, and sand that would be used for building the physical infrastructure of central Bogotá. Once these resources diminished, however, *urbanizadores piratas* (pirate urbanizers) began to appropriate territories, subdividing them into small plots and selling them without legal

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<sup>1</sup> Discussions of the dynamics mentioned here can be found in urban histories of Bogotá (see Mejía Pavony, 2000; Palacios, 2006).

title. Heavily mined, and therefore unsuitable for most other uses, these lands were of low economic value. Meanwhile, the demand for affordable property in the city was growing rapidly, and the state had neither the interest nor the ability to regulate it; in fact, politicians often permitted ad-hoc urbanization in exchange for popular support. Settlers then built their own dwellings using rudimentary construction materials and techniques on what was already precarious terrain. As the story goes, these settlements were fated from the outset to be exposed to risk.

This narrative is used to explain the dynamics of twentieth-century urban development in Bogotá. Highlighting economic, demographic, and geographic factors, it critically examines the production of urban environmental inequality. Accurate as it may be, however, this explanation unwittingly projects onto the past a way of conceptualizing space and population that is a more recent invention; it historicizes everything but the key category of concern: the “zone of high risk.” Risk thus appears a physical characteristic of the urban landscape that precedes the studies, maps, and plans that initially brought it into being as a technique of government. We are, therefore, left with the impression that Bogotá’s unequal landscape of risk was inevitable—as Mike Davis (2006, page 121) puts it, “very poor people have little choice but to live with disaster.” According to this line of thinking, risk becomes, as for Davis, “poverty’s niche in the ecology of the city.”

The tenet of critical urban studies that supports this account is irrefutable: the social production of space is, indeed, a deeply uneven process (Smith, 2008). There is no doubt that the poor in Bogotá are disproportionately exposed to the devastating effects of environmental disasters, such as landslides and floods. Throughout the informal settlements of Ciudad Bolívar, evidence of erosion, subsidence, and contamination are material signs of the structural inequality

that constitutes the urban periphery. But while treating risk as an unfair burden suffered by the disadvantaged may be necessary, it is insufficient. For in Bogotá's "zones of high risk," the very factors that enabled slums to exist are now the reason for their removal. Risk is no longer the "Faustian bargain," as Davis calls it, that the poor must accept in order to secure housing; as the municipal government relocates vulnerable populations to protect them from environmental hazard, risk is now the logic underlying their displacement.

As a result, I find it necessary to invert the argument formulated above. Rather than investigating how the poor came to inhabit landscapes of risk, I will ask: How did "zones of high risk" come to inhabit the territories of the poor? By placing these zones in question, we see that before the 1990s risk did not exist in Bogotá, at least not as a technique for governing specific spaces and populations in the city. By approaching "risk" ethnographically, we can analyze the processes through which it is made into an object of governmental intervention. This enables us to think critically not only about the production of unequal geographies of vulnerability, but also about emerging attempts to ameliorate them. The literature on political government is helpful here, as it offers tools for examining the diversity of ways in which risk becomes central to governmental assemblages at specific historical junctures, and to what effect.<sup>2</sup> The brief ethnographic section that follows, as well as the more extensive one that appears later, both offer highly representative, albeit fragmented, insights into the making of risk in Bogotá.

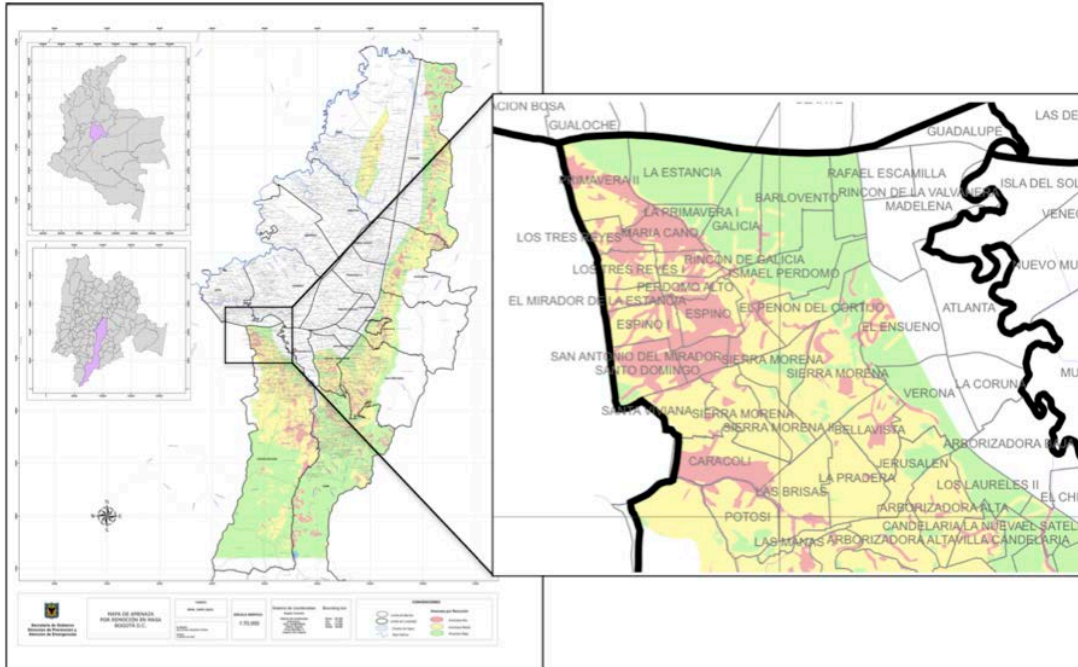
### ***The Map of Risk***

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<sup>2</sup> The literature on the political technology of risk is too extensive to cover comprehensively here. For key works, see essays by Robert Castel, François Ewald, Daniel Defert, and Ian Hacking (see Burchell et al., 1991); by Nikolas Rose, Thomas Osborne, and Pat O'Malley (see Barry et al., 1996); many articles in *Economy and Society*, especially volume 29(4) on "configurations of risk"; (see also Baker and Simon, 2002; Ericson and Doyle, 2003).

It is a slow afternoon in the office of the Caja de la Vivienda Popular. Everyone has just returned from lunch and is passing time until the steady stream of visitors starts up again. The Caja, as most people call it, is the branch of Bogotá's municipal government that, since 2003, has managed a housing resettlement program for families living in *zonas de alto riesgo*, or “zones of high risk” (Figure 1). Its official duty is to protect the lives of populations vulnerable to environmental disaster, such as landslide and flood, by relocating them elsewhere. I'm chatting with the social workers, architects, and lawyers who manage the day-to-day operations of the Caja's field office here in Ciudad Bolívar—a poor area in the mountainous southern periphery of Bogotá where the majority of these zones are located. Although the Caja's headquarters are in the city center, this office's location allows it to serve as the hub of the resettlement program for the many households undergoing relocation. And yet it is not merely a place where policies developed elsewhere are put into effect. It is a key site in which Bogotá's “zones of high risk” are produced—that is, where techniques of government are made and managed on an everyday basis.

We're discussing a recent political scandal when two women, both resettlement program “beneficiaries” arrive holding a newspaper clipping advertising houses for sale. Although the Caja is responsible for relocating “at risk” populations, it relies on the initiative of beneficiaries to manage their own resettlement. These women have been searching for housing to purchase with the subsidy guaranteed to the population living in “zones of high risk,” and they believe they have finally found ones that suit their criteria. Before they can proceed, however, their selections have to be approved by the *equipo técnico*, or the “technical team,” according to a strict set of norms, of which the risk designation of the new property is perhaps the most elemental.



**Figure 1: Bogotá's zonas de alto riesgo. Source: Dirección de Atención y Prevención de Emergencias.**

One of the Caja's architects, Ana María, takes the paper and looks at the address:

“Unfortunately,” she says, “these properties are in a *zona de alto riesgo*.” In a patient pedagogical tone, Ana María offers to explain. Rising from her chair, she shifts attention towards a map hanging on the wall (Figure 2), which shows the streets of Ciudad Bolívar shaded over in green, yellow, and red to indicate low, medium, and high risk. Ana María first points to the two properties, which are in a *yellow* zone (medium risk). But her finger then slides up the map an inch higher, stopping at two *red* lines just north of the street on which these two houses are located. “These red lines,” she explains, “are seismic faults where earthquake damage can be severe.” Ana María, regardless of the map, pronounces these properties “high risk” and, thereby, disqualifies them.





**Figure 2: A map of risk on the office wall. Source: Photograph by author, 2006.**

As I will discuss below, calculative predictions of disaster risk in Bogotá—that is, which neighborhoods are designated “zones of high risk” and therefore subject to relocation—were made initially in the late 1990s. And the more general process of institutionalizing risk as a technique of government in Colombia began in the previous decade. Yet as Ana María demonstrates by her simultaneous reference to and adjustment of the map, these “zones of high risk” are not always fixed—neither “out there” in the field, nor here in the office. Although this encounter took place in 2006, before risk designations became the exclusive domain of the architects and engineers of the Directorate for Emergence Prevention and Response (DPAE), the entangled relationality of these designations persists. Risk remains a technique for rendering the uncertain future actionable in the present, and yet it is continually reconfigured in the everyday practice of urban governance.

## *Formations of Government*

These observations recall recent shifts in paradigms of urban planning, development, and governance, which assert that cities and their environments should be managed according to the rationality of risk (Zeiderman, 2008). In both the global North and South, it is common for cities to be governed through probabilistic calculations of potential events, from financial crises and terrorist attacks to disease outbreaks and natural disasters (Hodson and Marvin, 2009). Increasingly relevant are Foucault's (2007) 1978 lectures, *Security, Territory, Population*, and their emphasis on the rise of "security" as a technology of power that governs spaces and populations through predictive calculations of the probability of future events. But we must revisit how security is understood if we are to account for the techno-political process of governing the uncertain future of cities and urban life.

In these lectures, Foucault examines the emergence of security as a key technology of power in France. Unlike sovereignty and discipline, which prohibit and prescribe, security mechanisms insert their object of concern into a series of probable events whose likelihood of occurring in the future can be calculated in the present and then managed according to an average considered optimal or acceptable. Foucault illustrates the working of these three distinct, yet overlapping political technologies—sovereignty, discipline, and security—in the domain of health. While lepers of the Middle Ages were excluded from the general population by juridical mechanisms, and the plagues of the sixteenth and seventeenth centuries were controlled through disciplinary techniques, the problem of smallpox in the eighteenth century was tackled according to the logic of security. In the latter case, statistics were used to calculate the probability of infection across the population, and based on these calculations decisions to vaccinate were made. It is at this moment, then, that we see the emergence of what Foucault calls the "absolutely

crucial notion of risk.” In contrast to sovereignty and discipline, both of which would have tried to eliminate the threat and protect the population from infection, these inoculation practices calculated the likelihood of contracting or dying from smallpox within population groups. And these calculations revealed that the population was distributed spatially into “zones of higher risk” and “zones of lower risk.”

Shifting to examples of food scarcity and town planning, Foucault demonstrates a “similar evolution and more or less the same type of transformations” in other domains. However, Stephen Collier (2009, page 95) shows that, in his 1978 and 1979 lectures, Foucault is moving away from epochal proclamations whereby one technology of power replaces another and towards historically-specific analyses of how juridical, disciplinary, and security techniques are “recombined” and go through processes of “reactivation and transformation.” This approach, I propose, can be furthered by examining the processes through which security mechanisms are transformed in the everyday practice of government. A certain reticence to analyze governmental practice should be noted in Foucault’s method: by “art of government,” he clarified, “I did not mean the way in which governors really governed” (2008, page 2; cf. Rose et al., 2006). However, given the fundamentally uncertain and temporal nature of risk management, I argue that *what governors do* is of central importance. Thus I follow Collier, Lakoff, and Rabinow (2004, pages 5-6) in emphasizing both the “forms of reasoning” and the “practices” with which experts bring threats into frameworks of technical intervention. This, I will argue, reveals techniques of government to be dynamic spaces of entangled relationality between governors and the populations and environments they seek to govern.

One objection to this approach might be that it conflates “risk” in the technical sense with what François Ewald (1991, page 202) calls its meaning in “everyday language” (i.e., danger or

peril) and, thus, renders it analytically unproductive (cf. Lakoff, 2007). Most scholars of risk agree with Ewald's view and respect the strictly technical definition: risk is a modern technique for statistically calculating the likelihood of future events, bringing them into the realm of individual or collective decision-making, and mitigating their adverse effects through processes of economization and distribution (cf. Çalışkan and Callon, 2009; Hacking, 2003). This has enabled scholars to differentiate risk with clear analytical rigor from a range of related techniques (e.g., precaution, preparedness, preemption, enactment) used to govern future uncertainty (cf. fn. 2; Anderson, 2010; Collier, 2008; Ewald, 2002; Lakoff, 2007). A contribution of this article, however, is to heed Michel Callon's caution about "impos[ing] risk as an analytic category" (Barry and Slater, 2002) by resisting the urge to compare every case of risk governance to a pre-existing technical definition. Thus, I focus here on attempts to harness risk reasoning to specific social and political problems and in the process bring together diverse governing practices and assessment techniques, many of which do not conform to the analytical category of risk.<sup>3</sup> By subjecting governmental practice to ethnographic scrutiny, it is possible to see how "risk" comes to mean, and can be mobilized to do, different things.

My approach also requires examining Foucault's treatment of space. Geographers note that Foucault's initial emphasis on the spatial problem of the town wanes in the 1978 lectures, to such a degree that, as Stuart Elden (2007, page 32) points out, "territory is marginalized in Foucault's story." Others have urged us to remain focused on the production of space (Crampton and Elden, 2007). But Foucault (2007, page 20) makes a critical point about spaces of security: "The specific space of security refers...to a series of possible events; it refers to the temporal and the uncertain, which have to be inserted within a given space." He calls the space "in which a series of uncertain elements unfolds" the "milieu," which denotes a set of "natural" and

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<sup>3</sup> For a related approach to policy mobility and mutation, see (Peck, 2011; Peck and Theodore, Forthcoming)

“artificial” givens. This is the field in which security intervenes according to probabilistic estimates of events, which are produced as much by the multiplicity of individuals that make up the population as by “the materiality within which they live.” What Foucault does not do is describe how the space in which security intervenes (the “milieu”) comes into being. Hence, my interest in the “zone of high risk” in Bogotá as a technique of government that aims to intervene upon spaces and populations that are themselves active and in motion.

This implies that we ought not to treat urban populations and environments as inert, passive objects upon which governments either do or do not act. Rather, the city can be understood as a hybrid assemblage of humans and non-humans, at once natural and social, made up of dialectical relations between living and non-living things. This terrain has been most thoroughly explored by urban political ecologists, especially those with a keen interest in science and technology studies (Fariás and Bender, 2010; Heynen et al., 2005; Monstadt, 2009). With reason, they have found water to be especially good to think with and have built theories around concepts such as “hybrid” or “cyborg” urbanization (Gandy, 2004, 2005; Swyngedouw, 2006). By extending their insights to what is assumed the most inert, stable, and inactive aspect of cities—the surface over which everything else appears to move and flow, the very ground on which the city is built—we may recognize urban populations and environments as more than mere objects or outcomes of governmental technique. Ultimately, this will allow us to describe more faithfully how such techniques actually work.

### ***The Governmentalization of Risk***

Before discussing the emergence of “zones of high risk” in Bogotá and then turning to their ongoing formation, I will show how risk was governmentalized on a national level.

Colombia is a country plagued by violence where security has become the dominant logic by which state, territory, and population are understood. Despite popular conceptions of “state failure,” in the past two decades Colombia has become seen as an exemplary site of innovation in approaches to governing insecurity. On the one hand, its government has advanced a militaristic approach to controlling territory, establishing sovereignty, and defeating “narcoterrorism.” On the other hand, Colombia has witnessed an elaboration of governmental programs employing techniques of risk management whose aim is to protect life against a broad range of threats—from violent crime to natural disaster. The emergence of a broad range of security mechanisms reflects a shift in how the state seeks to govern potentially hazardous futures.

For most of the twentieth century, however, the dominant logic governing the Colombian state’s approach to disasters was emergency response (Ramírez Gomez and Cardona, 1996, page 256). As in other Latin American countries, the role of the state in managing disasters was complemented by the Red Cross Societies, which also provided humanitarian aid to victims in the aftermath of catastrophic events. Most disaster management took place on the local level, however, since municipal fire brigades were ultimately responsible for attending to calamities. It was not until 1949 that Colombia established a national policy for handling large-scale, public emergencies. Following the assassination on April 9, 1948 of populist political leader and presidential candidate Jorge Eliécer Gaitán, and the ensuing popular revolt that wreaked havoc and left much of Bogotá in ruins, the Colombian government signed an agreement with the Red Cross to create a semi-public parastatal organization, the Socorro Nacional de la Cruz Roja, which would thereafter be responsible for managing operations of emergency response on a national scale (Ramírez Gomez and Cardona, 1996, page 264).

The burden shifted from the Socorro Nacional de la Cruz Roja in the 1960s, when Latin American countries influenced by the U.S. Agency for International Development (USAID) began creating agencies of Civil Defense. Adhering to national security policy, these offshoots of the military were given the mission of establishing ties with the civilian population in the interest of combating the “internal enemy.” The threat of political subversion posed by local communist movements motivated these agencies to respond to disasters of accidental or non-human origin in order to prevent social and political instability (Ramírez Gomez and Cardona, 1996, page 265). These were the entities that came to the aid of the Colombian city of Popayán following the 1983 earthquake there—a disaster understood primarily as a problem of rescue, recovery, and reconstruction. In contrast, two catastrophes that converged in November 1985—the eruption of the Nevado del Ruiz volcano that killed over 25,000 people and the guerrilla siege of the Palace of Justice in Bogotá—precipitated a shift towards anticipatory logics of risk management.

The Department of Risk Management, which is now the national authority, affirms that a transition occurred at this moment: “The general policy of the Colombian state has been, since 1986, to consolidate and incorporate the mitigation of risks and the prevention of disasters in the socioeconomic development process of the country.” Disaster risk management has gone in and out of political favor since the mid-1980s and it would be a mistake to see its emergence as a linear process. But it is clear that, from this moment onward, the Colombian state would be obligated—legally, politically, and morally—to both respond to emergencies after they occurred *and* to plan and govern the national territory according to calculations of risk. The 1985 volcanic eruption and guerrilla attack were quite different catastrophes, and yet together they were instrumental in precipitating the rise of risk management as a technique of government in Colombia.

The linkage between diverse security threats was not new in 1985, however. As mentioned, the responsibility of Civil Defense agencies to protect the nation against foreign and internal enemies implied the imperative to respond to natural disasters. President Belisario Betancur exemplified this approach to disaster management in 1983 when he assured survivors of the Popayán earthquake that the Army would soon arrive to ensure that subversive elements did not create disorder and social instability. However, the events of November 1985 brought about a new connection between human and non-human dangers. It was believed that the likelihood of the “political” threat of armed insurgency and the “physical” threat of natural disaster were both known to be high, and yet no action was taken. Whatever the source of catastrophe in the future, response alone would no longer be sufficient.

Nevertheless, a boundary separating political-military threats from those of a technical-civilian nature would soon be drawn. When Colombian disaster policy had been limited to emergency response, the same entities aided in rescue, recovery, and reconstruction whether the event was a bomb explosion or a seasonal flood. But once risk management became the imperative, the job of collecting, analyzing, and acting upon prognostic information about threats was divided between national security agencies on the one hand (e.g., the Ministry of Defense, the Army, the Administrative Department of Security) and technical organizations on the other (e.g., the National Directorate for Disaster Prevention and Response, the Red Cross, the National Institute of Geological Study and Mining). Despite their institutional disarticulation, however, both disaster risk management and national security would thereafter share a commitment to rationalities for governing the future through predictions of threat and calculations of risk.

President Betancur, who was heavily criticized for his handling of the events of November 1985, was succeeded in 1986 by Virgilio Barco. In seeking to rectify the crisis of



political authority and technical expertise that plagued his predecessor, and recognizing that doing so demanded a future-oriented approach to disaster management, President Barco summoned a select group of experts. As one of these experts later recalled, Barco told them: “Look, I don’t want a Ruiz to happen to me. I don’t want what happened to Betancur to happen to me. I don’t know anything about this stuff. You guys, watch what you’re doing” (interview notes, August 19, 2009). Following Barco’s plea, the National Office of Emergency Response (ONAE) was created in late 1986 with support from the United Nations Development Programme (UNDP) (Ramírez Gomez and Cardona, 1996, page 271).

In 1988, the Colombian government created a National System for Disaster Prevention and Response (SNPAD), which sought to integrate risk management planning on a national scale, as well as with local-level institutions of government (Congreso de Colombia, 1988a). A sense of urgency was evident in Representative Darío Martínez Betancourt’s plea for Congress to approve its creation: “There are numerous events that could lead to death and that threaten the life and tranquility of Colombians. Colombia is a country of extremely high risks (*un país de altísimos riesgos*)” (Congreso de Colombia, 1988b). Once the SNPAD was adopted, the Colombian state thereafter was obligated to maintain an information system that would locate risks throughout the country and develop the techniques necessary to detect, measure, and communicate this information (Congreso de Colombia, 1988a). Scientific authority for studying and mapping risks was then distributed among a handful of government agencies according to their particular areas of expertise (geology, hydrology, meteorology, etc.) (Presidente de la República de Colombia, 1989).

The objective of creating a national system for risk management took on greater urgency as another series of events transpired during its initial planning phases. In March 1988, the Ruiz

volcano was again threatening; another volcano, Galeras, began to show signs of activity; and in August of the same year, a period of intense rainfall caused deaths and serious damages in nearly 400 municipalities mostly along Colombia's Atlantic coast. In the immediate aftermath of these events, legislation was passed giving ONAE the added responsibility of ensuring that disaster prevention regulations for "zones of risk" would be part of all future development plans (Ramírez Gomez and Cardona, 1996, pages 271-272). In addition, the same office would be obligated to establish regional and local committees of disaster prevention and response, and to administer the execution of studies to identify areas in which "neither human settlements nor buildings should be located" (Presidente de la República de Colombia, 1989).

Risk became a technique for governing Colombia's cities in 1989 when Congress reformed urban policy and obligated every municipality with more than 100,000 inhabitants to formulate development plans (Congreso de Colombia, 1989; see also Pecha Quimbay, 2008, page 86). Although it was a move in the direction of decentralization, this law nevertheless determined the basic criteria for how cities throughout Colombia would be legally bound to govern themselves. Contained within these regulations was the imperative that urban governments establish an inventory of vulnerable human settlements by calculating their exposure to flooding, collapse, landslide, or other unhealthy living conditions. And if localized mitigation projects were not possible, municipal authorities would then be required to move forward with the relocation of the inhabitants of what would thereafter be designated "zones of high risk" (*zonas de alto riesgo*).

By this point, the division between political-military and technical-civilian threats had been codified in the legal and policy frameworks governing emergency response. Upon its initial creation in 1984, the National Disaster Fund could be applied to "catastrophes" caused by

“artificial or natural phenomena of great intensity or violence; unique or repetitive unfortunate events; diseases or medical conditions of an epidemic nature; and acts of hostility or armed conflict of a national or international scope that effect the population” (Presidente de la República de Colombia, 1984, 1989). However, the 1989 law that brought the Fund into operation replaced the term “catastrophes” with “situations of disaster, calamity, or those of a similar nature” and limited its application to “floods, droughts, frosts, hurricane winds, earthquakes, tidal waves, fire, volcanic eruptions, avalanches, landslides and technological risks in declared disaster zones” (Presidente de la República de Colombia, 1989). Likewise, the 1988 law creating the SNPAD also defined “disaster” in such a way as to limit its scope: it became “the grave damage or alteration of the national conditions of life in a determinate geographic area, caused by natural phenomena or by catastrophic effects of the accidental actions of man” (Congreso de Colombia, 1988a). With the shift of emphasis from response to risk, the legal and policy framework underpinning disaster management in Colombia divided the world of potential threats and emergencies into those of human and non-human nature.

This would be the first time that risk, as an object of scientific study and governmental concern, would enter the juridico-political apparatus in Colombia. However, this was not the result of national events alone. The United Nations Development Programme (UNDP) had sent recovery aid to Colombia after the 1985 Armero disaster and was actively involved in the initial creation of the National Office of Emergency Response (ONAE) in 1986 and 1987. The influence of the international community intensified when the General Assembly of the United Nations proclaimed in 1989 that the 1990s would be the “International Decade for Natural Disaster Reduction.” With this declaration, the UN directed development agencies “to pay special attention to fostering international co-operation in the field of natural disaster reduction”

and, in particular, to assist developing countries in their effort to implement risk management programs and policies (United Nations General Assembly, 1989). Asserting that “fatalism about natural disasters is no longer justified,” this UN declaration motivated donor countries and multilateral organizations to direct resources and expertise toward countries of the global South.

The globalization of risk management policy would continue throughout the “International Decade for Natural Disaster Reduction.” In the late 1990s, the UN created an inter-agency collaboration called the International Strategy for Disaster Reduction (ISDR), which would pursue the initiatives that had begun in the previous decade. The ISDR partnered with the World Bank in 2006 to form the Global Facility for Disaster Reduction and Recovery (GFDRR), which would provide technical and financial assistance to “high risk low- and middle-income countries” in order to focus their national development plans on disaster reduction. By 2009, the World Bank was providing Colombia over \$340 million in funding for disaster management projects and Colombia had become recognized internationally as a leader in this field (GFDRR, 2009, pages 224, 229). While the coinciding catastrophes of 1985 created an initial opening, the rise of risk management as a governmental imperative in Colombia reflects a more general shift in ways of thinking about and acting upon disasters, development, and governance on a global scale.

### ***The “Zone of High Risk”***

This section zooms in from the previous one to focus on the formation of the “zone of high risk” in Bogotá—a city now recognized internationally as a “model city” for its achievements in social inclusion, citizen security, mass transit, and public space as well as for its advances in the management of disaster risk. The story begins in late 1987 when the Bogotá city

council created the Fund for Emergency Prevention and Response. This fund was dedicated to financing a comprehensive disaster prevention program based on studies of *zonas de riesgo*, or “zones of risk” as they were initially called (Consejo de Bogotá, 1987). Shortly thereafter, in 1989, the Colombian legislature enacted a broad reform of urban government, which obligated every municipality with a population of over 100,000 to maintain an inventory of *zonas de alto riesgo*, or “zones of high risk,” and to begin mitigation work or relocation programs in these areas (Congreso de Colombia, 1989; Pecha Quimbay, 2008, page 86). Although this law applied to all cities, the municipal government of Bogotá became one of the first to implement it. In 1994, Bogotá’s mayor, Jaime Castro, directed what was then the Office of Emergency Prevention and Response (Oficina para Prevención y Atención de Emergencias) to begin analyzing the distribution of environmental risk across the city (Alcalde Mayor de Santa Fe de Bogotá D.C., 1994). A consulting firm, Ingeocim, was hired to conduct these studies and to devise a methodology for calculating risks of a geophysical nature (Ingeocim, 1998).

The imperative to govern the city as a space of risk extended beyond the domain of environmental hazards in 1995 when an unconventional mathematics professor and university administrator, Antanas Mockus, became mayor of Bogotá in the wake of a barrage of homicides, political assassinations, crime waves, and explosive attacks. Searching for innovative strategies with which to confront problems of urban insecurity, Mockus found inspiration in Cali, Colombia’s third largest city, and its novel Program for Development, Security, and Peace (Martin and Ceballos, 2004, page 222). This program was an initiative of Cali’s mayor, Rodrigo Guerrero, a medical doctor whose graduate studies in public health had led him to approach insecurity from an epidemiological perspective (Rivas Gamboa, 2007, pages 157, 180-181). The Mockus administration subsequently adopted a similar strategy in the creation of a Unified

Information System of Violence and Delinquency (SUIVD) in Bogotá. Like its predecessor in Cali, this system was based on the idea that outbreaks of crime and violence could be treated like diseases of unknown origin. By collecting and analyzing existing crime data, the SUIVD sought to identify risk factors that could be used to predict when and where violence would be likely to occur in the future. Once the spatial distribution of risk factors was determined, the system could guide a coordinated strategy of governmental intervention targeting high-risk activities, populations, and neighborhoods.

The violence prevention strategy that emerged in the mid-1990s in Bogotá paralleled attempts to map the city's vulnerability to environmental hazards. Shared between these efforts was the idea that Bogotá was a space of risks that could be known scientifically and then governed through interventions concentrated in specific zones. While it is difficult to assess how either model influenced the other, it is clear that at this moment a range of problems and their proposed solutions could be conceived in similar ways; both governmental technologies were based upon the imperative to protect the life of the population against a range of threats. Although this imperative had coalesced in the aftermath of the two catastrophes that coincided in November 1985, it was a decade later that Mayor Mockus brought it to the forefront of urban policy in Bogotá (Rivas Gamboa, 2007, 180-181). Even as social-political threats were separated from technical-physical ones, protecting life by intervening in high-risk zones would be as common to debates surrounding crime and violence as to concerns about natural disasters.

In 1998, studies of environmental risk in Bogotá were completed. The consulting firm, Ingeocim, had measured threats (*amenazas*) of various kinds—earthquakes, landslides, floods, fires, and industrial accidents—and mapped their spatial distribution. “Threat” referred to the probability of occurrence of a given physical phenomenon over a specific period of time. To

calculate the threat of landslide (*remoción en masa*), for example, they had used GIS mapping techniques, photographic interpretation, field surveys, and historical data. They broke down landslide threat into three levels—low, medium, and high—and mapped them accordingly. Ingeocim then overlaid levels of landslide threat with measures of social and physical vulnerability (e.g., housing type, tenure, access to services, literacy, occupation), which when combined resulted in a “total loss index” (*índice de pérdida global*) (DPAE, 1999; Ingeocim, 1998).<sup>4</sup> “Zones of high risk” were those in which the expected average loss of life, property, and infrastructure in the event of landslide was estimated at over 62.5 percent of the total existing in the defined area (DPAE, 1999). Based on these studies, the municipal government then issued maps on the scale of the entire city. Priorities were established for more detailed calculations of risk on the scale of the neighborhood and the individual property (DPAE, N.D.). In 2000, these priorities, based on the intersection of high risk levels and low socio-economic status, were incorporated into Bogotá’s master plan (Plan de Ordenamiento Territorial, POT). While further analysis of the data behind the risk and calculations may be warranted (cf. Ericson and Doyle, 2004), what I wish to emphasize is the field of governmental intervention enabled by them.

Under the leadership of Mayor Enrique Peñalosa, the master plan for Bogotá sought to recuperate public space, improve the distribution of services, construct a mass-transit system, and regulate urban land use (Pecha Quimbay, 2008, page 100). In terms of housing, it was also an attempt to address Bogotá’s massive problems of informality and illegality. To upgrade self-built settlements lacking basic necessities and legal titles, the POT planned to provide them access to a comprehensive neighborhood improvement program. However, preliminary studies had shown that a large percentage of the developed territory of Bogotá was vulnerable to

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<sup>4</sup> According to interviews conducted with government officials knowledgeable about risk management, however, “vulnerability” in these studies was predominantly based on physical and not social factors.

environmental hazards or otherwise unfit for habitation, and this implied the need to resettle thousands of people (Pecha Quimbay, 2008, page 101). As a result, the plan adopted Ingeocim's identification of areas in which landslides and floods were likely to cause major damage and loss of life. Bogotá's Directorate for Emergency Prevention and Response (DPAE) was then given the technical responsibility for the ongoing evaluation and monitoring of "zones of high risk," and the Fund for Social Housing (Caja) was granted the authority to manage the relocation of populations inhabiting them.

At this moment, the "zone of high risk" enabled Bogotá's municipal government to confront the dual problems of insecurity and informality. While risk management had been a public and political concern since the 1980s, its migration to the city in the late 1990s depended on its unique ability to unite the two governmental imperatives dominant at that time. According to the objective of protecting life against potential threats, central to the Mockus administration, risk zones were a necessary component of the government's overall effort to govern crime, violence, and accidents. For regulating urban development and upgrading settlements lacking basic necessities, key concerns during Peñalosa's stint at City Hall, they offered a solution to areas that resisted legalization and formalization. Capable of adhering to both imperatives, the "zone of high risk" became a technique for governing the spaces and populations of Bogotá on the cusp of the millennium.

### ***The Technical Diagnosis***

Thus far, risk management in Colombia and the "zone of high risk" in Bogotá have appeared as established governmental techniques. Although the cartographic representations of these high-risk zones and their subsequent incorporation into planning regulations gave the



impression that they were static, the problem was, of course, that the topography of the city was not. And the municipal government always recognized that this was the case; a caveat accompanying DPAE maps states: “The map of landslide threat is of a temporal nature, and therefore subject to conditions present at any given moment. Since these are changeable through time, the threat levels could be variable” (DPAE, 2007). To account for the unstable ground of the city, risk must be monitored on an ongoing basis. Thus, DPAE created an instrument called the *diagnóstico técnico* (or, technical diagnosis)—an on-site evaluation conducted by staff engineers and architects. During these visits, which I describe below, DPAE technicians perform visual inspections and qualitative assessments of both the inhabitability of the property and the infrastructure of the neighborhood. The technicians then recommend immediate action, if necessary, and decide whether the property should be included in the Caja’s resettlement program (DPAE, N.D.). As we will see, this draws DPAE technicians into a series of interactions both with inhabitants of these zones and with the non-human world.

The routine work of conducting a technical diagnosis reveals that risk is not a static technique of government, but rather an ongoing attempt to render the uncertain future an object of official decision-making in the present. As highlighted by the map of risk described above, these techniques are not the exclusive domain of government technicians, but are rather constituted by encounters between these technicians and the spaces and populations subject to their authority and expertise. The following ethnographic account demonstrates that high-risk zones continue to be made and remade in interactions involving government officials, beneficiaries of their programs, and the urban environment. While this may be true of risk governance in general, an ethnographic approach illustrates the specific ways in which hybrid

assemblages of human and non-human agents come together to produce risk management as a technique of government in Bogotá.

On the ride to the *barrio* of San Rafael, the two government technicians I'm accompanying, Tatiana and Miguel, explain the purpose of our trip. We're setting out to monitor risk in a neighborhood that borders the site of a 1999 landslide, which destroyed hundreds of houses and took several lives. This case of *remoción en masa* (a geological process combining subterranean and surface movement) is the largest of any Latin American city, they say, covering 110 hectares. We pass the Escarpment of San Rafael, which is what DPAE calls the phenomenon causing this mountain to rise in some places, fall in others, and occasionally open up to swallow houses into gaping crevices. Over 150 homes were effected by a second landslide in 2000; 85 more were toppled in 2001; and then, in 2002, a major movement of earth damaged over 800 dwellings in the same vicinity (DPAE, 2006). Although technical studies began in 1999 immediately after the initial disaster—and rescue, reconstruction, and resettlement efforts have been underway ever since—the area was not officially declared a “zone of high risk” until over 1,000 properties had been damaged or destroyed (DAPD, 2006). Its official boundary was demarcated in 2004 and, from that moment on, those who survived and remained would be entitled to the Caja's resettlement program. However, as I would soon learn, the boundary of the risk zone—and, therefore, who has the right to housing subsidies and who does not; who is destined for relocation and who will remain—must remain flexible in order to keep up with the shifting ground beneath it.

The truck bumps and grinds up the steep, rutted dirt roads typical of the hillside settlements that make up the southern periphery of Bogotá. Tatiana points to a vast stretch of empty land once inhabited by over 3,000 families (Figure 3). She then indicates where mitigation

works will soon begin to protect the neighborhoods surrounding the now evacuated “zone of high risk” from further damage. Drains will be installed to channel water and retaining walls will be built to stabilize collapsing hillsides. Before starting work, however, DPAAE must conduct house-by-house inspections to determine whether the phenomenon causing landslides in the adjacent area is also threatening this neighborhood. Far from inert, the zone’s boundaries must be monitored regularly to keep up with a city in motion.



**Figure 3: Evacuated “zone of high risk.” Source: Photograph by author, 2009**

We’re dropped off at the border separating the evacuated zone from a dense settlement of self-built houses that vary in size, material, and construction. Though some are two or three stories tall with concrete or brick facades, most are rudimentary, one-floor dwellings made of cinderblock, wood, and tin. As we begin our survey, a middle-aged woman with a small child passes by and asks: “Are you here to evict us from our houses?” Responding to her perception of

the work government does here in Ciudad Bolívar, Miguel reassures her: “No, we’re from the Department of Emergency Prevention and Response and we’re just monitoring the area.”

Tatiana raps on a window of the first house on our list. A woman answers from behind a locked door, “Who is it?” Tatiana responds, “Good day. How is everything?” “Very well, thanks,” answers the woman cautiously.

Looking down at his map, Miguel asks her, “Is this lot number 10, Señora?” Somewhat tentatively, she responds, “Yes, it’s lot 10.”

“OK, good,” Tatiana says as she begins to explain the purpose of our visit: “We’re with the Directorate of Emergency Prevention and Response, and we are doing inspections of the houses on this block. Due to the landslide phenomenon we have behind us,” she says gesturing toward the “zone of high risk” in the distance, “we need to verify whether you have recently noticed any cracks in the walls, floors, or roof of your house.”

“No, I haven’t noticed anything like that,” the woman answers.

Miguel follows with a further request: “Would you allow us to come in and look around and maybe take some photographs of the walls and the floor? Are you sure that your house has not been affected recently by any sort of cracking?” The woman hesitates for a moment before consenting. “I haven’t noticed any cracks or anything like that. But sure, you can come in if you’d like.”

The three of us enter, glance quickly at the walls, floors, and ceiling, take a few photographs and then leave, thanking her for her time. Tatiana then scrolls down to “Block 2, Lot 10” on her list and next to it enters: “No apparent effects.”



**Figure 4: *Diagnóstico técnico* in action. Source: Photograph by author, 2010.**

The rest of our monitoring day goes about like this. We move from house to house, introduce the purpose of our visit, ask whether the resident has noticed any recent cracking, and then conduct a brief inspection (Figure 4). Though occasionally we have to skip properties where no one is home, many encounters are identical to the one described above. Sometimes, however, the head of the household is not so trusting and cooperative. On a number of occasions, we are told bluntly: “No, there’s no cracking here.” And when Tatiana or Miguel asks permission to conduct a brief inspection, the request is met with abrupt rejection: “No, at the moment, no.” Perhaps it is simply an inconvenient time—a young mother feeding her newborn baby, for example. But in many cases, there is noticeable hostility. Experience might lead people to assume that if government officials are knocking on doors today, they will be delivering eviction notices tomorrow. As far as the monitoring goes, however, these rejections do not pose a

problem. Tatiana simply responds, “OK, fine, many thanks,” and marks down on her list: “Entry not permitted. Resident reports no apparent effects.”

I start to get bored, and find myself actually hoping that we’ll stumble upon something exciting—a collapsing wall, a falling roof, perhaps a cracking floor. And eventually we do. Upon entering one house, we find fissures that to me look serious in both the walls of the bedroom and the living room floor. Looking concerned, Miguel snaps a number of photographs, and then goes outside to examine the cinderblocks behind the cracking walls. He returns, informing the residents that their house is in danger of collapsing, but that the problem is due to *deficiencia constructiva* (faulty construction) and not to *un fenómeno natural* (a natural phenomenon). As Tatiana makes note of this evaluation on her list and we return to the street, I begin to wonder how one differentiates between these two types of damage. I ask, somewhat self-consciously: “How do you distinguish cracks caused by faulty construction from those caused by movement of the earth?”

Miguel patiently explains: “When there are problems with the way concrete is mixed, you see small cracks between the cinderblocks, telling you the builder did not use enough cement.” I then look to Tatiana to get her view: “You just know when it’s *mala construcción* (bad construction) and when it’s *algo natural* (something natural).”

We continue on with our technical diagnosis, moving to an adjacent block bordering the evacuated area. Turning the corner, we stumble upon a mud-filled ditch where a water supply tube is actively leaking. Though originally installed by the utility company, it was later tapped into by households not formally served by it. Water gushes out of a thin rubber hose most likely the work of the local *fontanero*, a self-employed water manager who installs informal connections, regulates flows, and fixes leaks. Miguel and Tatiana examine the ditch with great

concern. In addition to the water escaping from the hose, the ditch collects and channels rainwater during the wet season, both of which further destabilize ground already dangerously unstable. Miguel and I follow the seepage to the point at which it eventually disappears beneath the foundation of a nearby house, while Tatiana marks down our exact location. “I’m going to have to alert Rosa,” the *gestora local* (or, local manager) who represents DPAE at the neighborhood level. “She’ll contact the water utility company and have them come remove the connection and repair the leak.” Thinking we have finally discovered reason to declare this area a “zone of high risk,” I ask: “Will this affect the boundary and therefore who will be relocated?” “No, no, no,” she responds; “we’re looking for structural damage caused by *remoción en masa*. Anything beyond that is a different kind of problem. In fact,” she goes on to explain, “it’s good that we saw this; it means that any subsidence in the houses downhill from here is probably attributable to this.” The recognition that landslides are a more-than-natural phenomenon officially justifies inaction.

The day is finally winding down and only one more property remains. Miguel knocks on the door and the woman who opens it looks at his yellow DPAE jacket and asks with a smile, “Are you coming to kick me out?” “No,” Tatiana responds, “we’re just monitoring the block to see if there are signs of movement and we haven’t found any.” “Too bad,” the woman says, “*Ya me quiero ir!* I want to get out of here! I’ve been here for two years and I don’t like this neighborhood. I don’t like living up here on this hillside.”

Still hoping that we will find evidence that the ground beneath her house is unstable, she invites us to come in and inspect. She guides us from room to room, showing us where the roof leaks when it rains and where the floor is not level—signs, she hopes, that will convince us that she should be eligible for resettlement. “Unfortunately,” Tatiana informs her, “these problems

have nothing to do with *remoción en masa*,” or the geophysical movement occurring nearby. With this final inspection our technical diagnosis comes to an end, and the boundary remains as before.

This is the work that goes into making “zones of high risk.” It shows that these zones are far from inert boundaries conclusively designating the space of intervention for an established governmental technique. In their efforts to calculate the likelihood of landslide, government technicians are drawn into repeated interactions with inhabitants of these areas. In these interactions, expert assessments cannot be disentangled from those being made independently by non-experts. Ultimately, such assessments depend on how both groups engage in the sometimes collaborative, sometimes contentious process of codifying the world in terms of risk. The boundaries of the zone might have been expanded to include these households had Tatiana and Miguel seen things differently, had people reported more recent damage, had their walls and floors cracked in another way. What we encountered during our inspections—collapsing houses, bursting water tubes, willing evacuees, their recalcitrant neighbors—did not collectively translate into a definitive change in the risk level of the area. According to the interactions that took place, data was collected and a decision made. It may collapse tomorrow, but the neighborhood remains, at least for the time being, outside the “zone of high risk.”

### ***Conclusion***

This article tracked how techniques of risk management work to govern the uncertain future of cities. It has implications for the literature on political technologies of risk and security as well as for the field of urban studies. Bridging the gap between the two allows us to address the tendency among urbanists to focus critical attention on the production of unequal



geographies of vulnerability more than on actually existing attempts to ameliorate them (e.g., techniques of risk management). However, given the fundamentally mutable and uncertain object of these techniques, we must also reconsider how risk is understood. This requires analyzing not only the emergence of risk as a technique of urban planning and governance but also the continuous work required of efforts to render the uncertain future the basis for governmental intervention. This methodological orientation has conceptual consequences, as it raises questions about the degree to which political technologies, such as risk, denote a stable field of meaning, a coherent set of techniques, or a common phenomenon. While an affirmative response may be possible on the level of governmental rationality, this article contends that we must recognize the heterogeneous practices that constitute political technologies of risk management.

Much of this is acknowledged by scholars of risk, and yet their analyses of government tend to objectify the world being governed, as if that world were inert and stationary. An engagement with urban political ecology draws attention to the relationship of urban populations and environments to emerging forms of techno-political authority and expertise. The people and things subject to techniques of risk management often play an active role in their own governing, at times complicating, at others facilitating, and sometimes even inciting governmental thought and action. This recognition leads to a more nuanced view of the official imperative to protect poor and otherwise vulnerable populations from environmental hazards. Moreover, it allows us to consider whether explicitly acknowledging the hybridity of technical and social expertise, the fluid boundaries separating expert and non-expert knowledge, and the entangled relationality between governors and the governed could lead to more effective, egalitarian, and equitable approaches to securing urban ecologies. As this becomes an ever more pressing pursuit—and not

just in Bogotá, but throughout the world—we must grapple with the undeniable fact that cities, their environments, and their populations do not sit still while techniques of risk management are applied to them. Our governments, as well as those who analyze them, might do well then to heed the truism that the political technology of risk always rests on shaky ground.

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