

Journal of Human Security

Volume 12 (2016) | Issue 1
Basel, Switzerland
ISSN: 1835-3800

Journal of Human Security (ISSN: 1835-3800)
is an international, open access, academic,
interdisciplinary journal, published by Librello.

Cover image
Rocinha favela, Rio de Janeiro, 2011
(author: Lea Rekow).



About *Journal of Human Security*

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Editorial

Editorial Volume 12

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Published: 18 February 2016

Dear Reader,

As I write this, first official reports confirm the existence of gravitational waves which Albert Einstein predicted a century ago. Ground breaking scientific discoveries such as this reaffirms to me the spatial relationships between the universe and human security issues, placing those issues into a new perspective that contrasts with perspectives formed by our everyday lives. Nevertheless, for the majority of humanity, human security in its diverse manifestations remains the most significant consideration in their lives, whereas the nature of gravity is hardly given a thought until such time when some clever technologist uses such a new insight and ends up revolutionising our lives.

During the past months the plight of global refugees has reached dimensions that render its neglect politically and morally imprudent. News commentaries as well as official reports have increasingly adopted the term 'refugees' for all sorts of displaced people regardless of the causes of their displacement. This contravenes the official rhetoric of the UNHCR who heretofore stubbornly reserved the term for political refugees only and effectively ignored environmental causes for displacement. With vast regions of the Middle East having become environmentally uninhabitable, that stance is no longer defensible.

Displaced people are all *refugees* because they are seeking refuge from threats to their physical wellbeing and bodily integrity. To what extent those dangers are political, social, health-related, economic or environmental makes little difference to the fact that they feel threatened, and being offered refuge usually helps them. In a sense they are all environmental refugees because many (if not all)

of those threats ultimately arise from environmental problems such as resource scarcity, adverse climate, extreme weather events and other natural disasters, and crises of public health. Even political persecution and discrimination often arises from underlying basic scarcities, as the example of Ruanda indicated.

Furthermore, the label of 'migrant' seems inadequate to describe those people because it refers merely to what they are engaged in: migration. It does not shed light on their goals. In contrast, the goal of a refugee is rather obvious. Worse, dismissing them as 'economic migrants' obfuscates the causal relationship between economies and ecology, the fact that economic security is embedded and absolutely dependent on the integrity of environmental support structures. Those few 'migrants' who really only seek to improve their income situation from adequate to luxurious are not the ones who make the headlines. In fact, they attract other labels altogether—entrepreneurs, investors, or simply immigrants.

The ongoing crisis in Europe has brought to the forefront the question of who should offer refuge to refugees. 'Western' developed countries have traditionally been the preferred destination by far, despite deep cultural disparities and inadequate provisions for integration. It would make much more sense for a Muslim refugee from, say, Mauritania to apply for refuge in a predominantly Muslim country. So why does he instead trust his life and that of his family to a fragile boat on the Mediterranean to seek refuge in a society that is so very different from his native background? Ignorance is surely only one reason among many. Economic aspirations have always been stated as the prime reason. But the plight of Syrians has underscored

political conflict and environmental insecurity as drivers. In the absence of adequate coordinating efforts by the UNHCR or other organisations with similar globally recognised authority, the refugees continue to choose their destinations according to dominant rumours and affordable transportation channels.

At the receiving end, European countries are being blamed for not providing enough of what are considered adequate support measures, ranging from humanitarian rescue and aid to the establishment of special economic zones in transit countries such as Libya and Turkey. Within the European camp divisions appear; some Scandinavian countries have begun to forcibly return refugees to their home countries, apparently with no regard as to whether such a home is still in evidence. At the other end of the spectrum, Germany has taken the lead in opening its doors to refugees and organising their settlement, against significant popular opposition exploited by the right wing. The small south German town of 35,000 where my mother in law lives currently accepts 800 refugees every day! For the first time in years, Chancellor Merkel is being openly criticised for her political choices.

Other more culturally compatible potential host countries appear relatively unmoved. As I write this, delegates from Saudi Arabia, Jordan, and other Arab countries are conferring in Munich; but their agenda are still dominated by military security. What are affluent Muslim countries such as Malaysia and Indonesia offering those teeming masses on Syrian and Lybian shores? How many Saudi dollars are finding their way towards organising migration operations and third country resettlement programs? The fact that those questions are so obviously rhetorical highlights the extent that governments have failed to step up, and the paucity of empathy among the leaders of Muslim societies. In a globalised world that freely trades goods, services and people, the ideals of humanitarianism can no longer be relegated to 'Western thinking'. Moreover, empathy for fellow Muslims should be unaffected by that prejudice. Most obviously, it is the UN and its branch in charge of refugees, the UNHCR, that have failed to offer adequate leadership, if only in terms of ideas and propositions. Like it or not, the UN remain the world's most important instrument of global governance, despite all its blind spots and inadequacies. Effective mechanisms for the coordination and implementation of mass migration must come from the UN before any national governments or supranational organisation.

The refugees themselves are faced with the traditional Immigrant's Dilemma—how much integration to aim for, how much of their own cultural heritage to abandon. Elsewhere we have proposed concrete measures how both newcomers and host societies can 'prepare to be offended' [1]. The concept of cultural safety allows for the analysis of challenges and offers prescriptive strategies for minimising sources of insecurity for ethnocultural minorities in disparate host societies. Among the many challenges associated with the situation of resettled refugees and ethnocultural minorities, two prominent issues deserve special attention: violence

against women and the public critique of humanitarian action.

In a news item of 28 December 2012, an Italian village priest denounced women for inviting domestic violence by not being subservient enough. In 2013, one of the young female students who was gang raped on a bus in India died in the Singapore hospital where she had received intensive care. New Year's Eve 2015 in Cologne saw scores of women assaulted by a mob of up to 1,000 young men reportedly of North African and Arab descent, some of them asylum-seekers and undocumented migrants. The public reaction, delayed by an attempt by the media to downplay the events, has divided feminist and anti-racist advocates [2]. At least some of the assaults appeared to have been premeditated and organised. Collective and organised violence against women has assumed new dimensions in peacetime and war [3]. A nasty aggravating feature is the attitude with which victims of rape are treated by their families and communities in some cultures. The underlying cultural values that inform such assaults and the treatment of their victims make it glaringly obvious that not all cultural values are sacrosanct, that some of those values are direct causes of human insecurity and thus no longer defensible by anti-racist arguments. This is a lesson that must be heeded by all would-be immigrants in the interest of human security.

Activists and organisations that try to help newcomers make a home in their new host society are occasionally subjected to public critique labelling them as 'do-gooders'. The term tends to be used by critics to contrast themselves against their opponents. Users of the term imply that they themselves are something other than 'do-gooders', which begs the question what exactly constitutes the antonym. The label is applied to people with active agenda towards altruistic benefits, the 'public good'. They have a clear vision of what agenda and goals the public good entails and openly advocate their underlying values. They follow the principles of vociferous advocacy and the moral duty to take action wherever it promises concrete progress towards those goals. Their strategies are informed by virtues such as non-violence, impartial judgment, and empathic prioritisation of the greatest benefits for those with the greatest need.

The antonym can pertain to the person's convictions and/or to the person's actions. The convictions of persons who regard themselves as 'not do-gooders' are necessarily opposed to the convictions of altruism, public welfare and social justice. That leaves primarily ideals based on self-interest, partiality, materialism, competition and privilege. These ideals are seldom advocated explicitly; it is much easier for their advocates to merely attack the opponent's convictions. As for actions, the antonym implies either their lack as in confident *laissez-faire*, circumspect wait-and-see, or just fatalistic passivity. These actions can only be sufficiently differentiated from those of the do-gooder if they are directed towards self-enrichment, inequity, social stratification, favouritism, or towards external targets

to be dominated. Such actions do not exclude violence, victimisation, aggression and the neglect of society's most needy. Again, these are not agenda that are prudent to advertise—hence the focus on disparaging the opponent's instead. Bystanders judging between the two sides would evaluate the values, motives, decisions, and actions. The do-gooder tends to be open about those, although deception under that banner has been known to occur. For the antonym, well, we have yet to find a label. If they really do not share any of the do-gooder's values and motives, and if they disagree wholeheartedly with their decisions and actions, then I can think of only one: a criminal.

In the post-COP21 context humanity has recognised that global environmental change will progressively reduce

habitable and bioproductive land areas, leading to the eventual displacement of millions. Populations continue to grow. If even only the mid-range estimates of sea level rise become reality, the primary mode of human habitation in this century is likely to be the refugee camp. In the effort to develop effective and just contingencies, we would do well to treat the current challenges regarding refugees as opportunities for rehearsal, for determining which measures work best to ensure a modicum of human security for those unfortunate enough to be deprived of their homes.

Best wishes,
Sabina

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Research Article

Pacification & Mega-events in Rio de Janeiro: Urbanization, Public Security & Accumulation by Dispossession

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Submitted: 29 June 2015 | In revised form: 12 November 2015 | Accepted: 9 December 2015 |

Published: 18 February 2016

Abstract: This paper outlines how Brazil's latest public security initiative—its highly controversial Police Pacification Campaign (UPP)—is an integral component of a neoliberal political framework that is enacting rapid urbanization projects in and around strategically located favelas (informal settlements or slums) of Rio de Janeiro. Specifically, it evaluates what kinds of economic development initiatives are moving forward, how they are facilitated by the UPP, how they connect to the city's mega-events, and who is profiting from them. The article also examines how the pacification has affected residents in three favelas over a seven-year period from the inauguration of the UPP in 2008 through to mid-2015.

Keywords: accumulation by dispossession; favelas; mega-events; police pacification; public security; Rio de Janeiro

1. Introduction

Public insecurity has long impeded the effective governance of Rio de Janeiro. Historical State [10] abandonment of Rio's favelas (informal settlements), coupled with these territories being dominated by criminal gangs over the past several decades, has gradually come to almost completely disenfranchise people living in favelas. In addition, state military incursions and inter-gang warfare have created a scenario whereby many favelas resemble full-blown internal armed conflict zones.

With Rio's successful bid to host the 2014 World Cup and 2016 Olympics it became a political priority for the city to overcome its hyper-violent reputation and rebrand itself as a desirable, international tourist destination. A new public security campaign—the *Unidade de Polícia Pacificadora* (UPP or police pacification campaign)—was crafted and launched as a result [1]. Established in 2008, the UPP

has, to date, deployed more than 9,500 police officers to 'pacify' 38 favelas located close to affluent neighborhoods, hotels, tourist spots, and mega-event venues (Figure 1) [2]. The remaining 700+ favelas of Rio have not been affected by pacification. Many continue to be governed by armed criminal gangs.

Under a sparse legal framework [3] Rio's UPP program has two main objectives:

- i) To install Police Pacifying Units and Special Ops military forces in favelas in order to take control of areas dominated by drug trafficking gangs, militias or other criminal organizations, and;
- ii) To permanently ensure the safety and respect for the rights of the local human population, and to allow the social occupation of these spaces to be made. Specifically, it is legally decreed that within 120 days of UPP occupation, state government agencies, public utilities, public/private partnerships and local gov-

silient and highly adaptive. In a climate of poverty and state neglect, they have independently built, administered and created governing structures for hundreds of communities—some of which are occupied by tens of thousands of people and considered cities in themselves. These communities have complex infrastructures, including their own systems for land title exchanges, roads, churches, schools, residential neighborhoods, commercial areas, charities, mail delivery systems, businesses, transportation services, and utilities networks.

The people of the favelas have been historically active in forming pro-democracy networks, residential associations, and labor unions [9], and for shaping much of the rich culture for which Brazil is internationally renowned. They also provide much of the cheap informal labor needed to keep the formal city functioning—the doormen, garbage collectors, construction workers, nannies, cooks, and cleaners.

The metaphor of segregation is often used to describe the social and economic divide seen across the city, one of Latin America's most unequal. Residents either live in the ordered and often luxurious and tranquil comfort of the *asfalto* (formal neighborhoods), or in the chaotic and frenetic disquiet of the favelas. The contrast between the two is stark. Thus, Rio remains a city largely characterized by a great disparity in wealth and privilege.

Even though an image of racial democracy is often promoted, it is Brazil's ruling elite who remain in control of its narrative, and who continue to ignore those excluded from the bourgeoisie. Social scientist, Dr. Jorge da Silva (Rio's former State Military Police Chief of Staff), stresses that this ought to be taken into consideration when attempting to understand Rio society, and by extension when discussing public security policy and the insolvent relationship between the State and favela residents [11].

5. The Theoretical Underpinnings of Pacification

The term pacification is historically associated with the activities of colonization—activities that are intricately woven into the fabric of Brazilian history [12] and, in Rio de Janeiro, are linked to counterinsurgency campaigns [13].

Pacification theoretically connects to an industrious component that aims to build social order along with law and order. According to the official narrative, pacification in Rio de Janeiro is based on a military campaign that aims at constructing the social through urbanization projects connected to mega-events [14]. This rhetoric is socially engineered [15]—wrapped up in the language of the 'war on drugs', 'public security', 'integration', and 'economic development'—and delivered through a convincing media campaign that, while presenting itself as a strategy for improving favela communities, in reality focuses on securing public support for military actions that strengthen economic expansion [16]. The manufacture of order through military suppression—or what critical theorist Mark Neocleous calls "war as peace [and] peace as pacification" [17]—is attached to an end goal of providing security for the bourgeois social order for

the purposes of capital accumulation [15].

Pacification in Rio, therefore, can be seen as a politically crafted, military response to the social insecurity felt by Rio's upper middle- and elite classes, not to rising criminal insecurity. The author argues that while pacification does provide some small social benefits to Rio's favela constituencies, moreover, it is a core political approach of a neoliberal government that selectively and aggressively uses military occupation and takeover to secure vulnerable regions of social space for the primary reason of increasing capital accumulation [18].

6. The Policing Landscape: Drugs, Gangs, Corruption & Violence

The military procedure of pacification follows basic steps. First, Special Forces invade a targeted favela en masse. Police Pacifying Units (UPPs), then set up military posts inside the favela to control the newly secured territory. It is a difficult task. They have to hold territory where drug culture is not eradicated but merely concealed, and where traffickers shift their ground rather than lose it. They may drive visibly armed criminals out of pacified areas, but in doing so displace them to areas that are not pacified. After a time, trafficking also tends to reestablish itself as it adapts to operating inside pacified territory, a situation that often relies on police collusion.

The police are an easy target for corruption. The complex system in which drug-related and other criminal activities feed on police corruption and criminal complicity now permeates Brazil's political arena—with drug money used to finance politicians and subvert the criminal justice system in the municipal and state legislatures at the highest levels [19].

The way in which the drug trade is structured, and responded to as part of the international 'war on drugs', has exacerbated urban violence. Dr. da Silva points out that while the Global North fights drug consumption through legislation in its own nations, countries such as Brazil are tasked with the real war of militarized combat aimed at eradicating drug culture (production, distribution channels and local cartels) [11]. This is indeed the case in Rio de Janeiro. Clashes between security forces and drug traffickers in the favelas have been likened to the military operations being carried out in places like Afghanistan [13]. As Marcelo Burgos points out, Rio continues to tackle the problem of drug trafficking in favelas using the war metaphor, through aggressive military confrontation that results in civilian casualties and mistrust of the government, and their ability to manage or reduce violent crime [20]. These operations signal a legitimization of the forceful containment of violence, potentially impede democracy [21], and tends to resign residents to the inevitability of being governed by drug traffickers.

Not only are police engaged in combat with gangs, but in some instances have replaced them. Since pacification, Rio has seen an explosion of militias (security and ex-security forces who control favela territory in a way sim-

ilar to gangs). In 2004 there were six militias operating throughout the metropolitan area. In 2014, there were 148 [22]. Police have also been heavily criticized for violence, torture, unlawful killings and cover-ups [23], and several UPP commanders have been removed due to their involvement in corruption scandals [24].

Many current and former police officers, especially those in militias, have been linked not only to extortion, but to extra-judicial killings. 16% of homicides registered since pacification began took place at the hands of on-duty police officers. Of the 1,275 reported killings by these officers between 2010 and 2013, 99.5% victims were men, 79% were black, and 75% were between the ages of 15 and 29 [25]. These killings are rarely investigated.

Police in Rio are the most mistrusted and corrupt in the country. 7.2% of the 8,500+ people surveyed throughout the metropolitan area claim they have been extorted by police officials. This figure constitutes 30% of all extortion victims nationally [26]. Dismally low police wages also makes drug trafficking an attractive prospect. In December 2012 alone, some 59 Rio military police were arrested for running an alleged drug ring [27].

Police morale is generally low. The UPP program, in particular, suffers from a varying quality of officers, many of who are being deployed to UPPs without wanting to go. Of 359 police officers interviewed from the first nine UPPs deployed in Rio, 70% said they would prefer placements in other policing units, and 63% considered their training inadequate, especially in regards to using non-lethal arms and concerning the reduction of domestic violence (one of their key mediation duties). In addition, high proportions of officers believed the UPPs' principal objectives were ensuring public safety for the World Cup and Olympic Games and reassuring the middle class. Further, 65% saw it as a way of guaranteeing support during electoral campaigning. More than half of the police interviewed noted negative public perceptions, and only a handful regularly participated in community meetings [28].

From the onset, the UPP campaign has been rapidly implemented. Now with almost 10,000 officers, some police claim it has grown too quickly. Yet, the overall numbers of Rio's security forces are set to expand again, with the expectation that at least 60,000 personnel will be employed to ensure security during the Olympic Games [29].

R\$ 2.5 (US\$ 0.6) billion has been dedicated to providing security for the three weeks of the Olympics—half of the state's total annual security budget. This excludes the cost of the UPP—which runs at more than a half billion reais annually (US\$ 130 million), as it currently functions [6]. Even if the UPP was able to expand dramatically (an unrealistic scenario given the current economic downturn), the program will only ever be able to provide security for a fraction of Metropolitan Rio's 750+ favelas, suggesting—as is characteristic of neoliberal governance—that Rio's public security policy has been produced by and for specific private interests.

7. Mega-events—A Case of Accumulation by Dispossession

David Harvey hypothesizes that capital(ism) is constantly reconfiguring its routes of circulation and accumulation in order to expand power through ways that are historically and geographically contingent on an amalgamation of i) the devaluation of existing assets (through disinvestment, abandonment, annihilation, etcetera); ii) the reinvestment of surplus capital in promoting economic growth (expanded reproduction); and iii) rent extraction (leveraging of commodified assets such as labor, land, public utilities, pension funds, et cetera) [30].

The releasing, seizing, appropriation, and leveraging of sets of assets at very little to no cost, at the expense of democratic rights, is basically what Harvey refers to as accumulation by dispossession [31]. These processes tend to happen in areas of uneven geographical development and lived space, and are dependent on a union between the State and the predatory facets of finance capital—what Harvey refers to as 'vulture capitalism' [5]. In Rio, they look very much like Naomi Klein's idea of 'disaster capitalism' [32].

Mega-events have been thoroughly critiqued for profiting from this form of exploitation. The forced implementation of neoliberalism [33], gentrification through large-scale redevelopment projects [34], the proliferation of growth machine politics [35], the acquisition of symbolic capital through city branding politics [36], and the sidestepping of existing planning regulations—known as 'exceptionality urbanism'—are all aspects of accumulation by dispossession, and all major legacies of mega-events [30].

Designed to redefine the city through branding, with a view to attracting future capital, Rio's mega-events provide massive opportunity for infrastructure investment and real estate speculation by circumnavigating normal political processes to manufacture a 'city of exception' [37] for powerful amalgamations of public/private interest groups. These coalitions of corporations and politicians, along with representatives of international capital, drive public policy decisions without public accountability [38].

8. Exceptionality Urbanism: Consolidating Power & Reconfiguring Routes of Capital

Mega-events intensify Rio's already pointed neoliberal economic policies. These policies use 'exceptionality urbanism' to justify land grabs and militarize public space. In order to comprehend how rapid urbanization is enabled, it is necessary to understand how the government legislates to guarantee the delivery of territory into the hands of property developers, in the name of mega-event viability, at little private risk.

One of the first and most important events in this multi-tiered legislative process came about in 2007 with the signing into law of the Document of Governmental Guarantees [39]—a private adhesion contract with the Fédération Internationale de Football Association (FIFA), which committed

Brazil to unconditionally accept all of the organization's demands without any allowance for negotiation of specific terms. In other words, the federal government agreed to enter into legal and financial servitude of FIFA, their corporate alliances, investors, transactions and investments, in blatant non-compliance with Brazil's Federal Constitution [40]. This law paved the way for the 2009 adoption of the Olympic Act and the 2012 General Law of the World Cup.

The Olympic Act [41] established the underpinnings of an institutional system that enables the breaching of existing law to bestow privileges such as tax exemptions, freedom from compliance to regulations such as building codes, or adherence to the legal principle of the "social use value" of property [42] in order to satisfy construction companies, real estate speculators, the tourism sector, the International Olympic Committee (IOC), and their sponsors. Legislation also authorizes the "use of [public] resources to cover the eventual operational deficits of the Organizing Committee of the 2016 Rio Games".

Equally critical to the judicial engineering of mega-events is Law 12.462/2011, which attacks the existing Law for Public Tenders and allows large sums of public funds to be transferred to private enterprise. The General Law of the World Cup is also based on commercial commitments and fiscal exemptions that benefit very specific private interest groups while increasing the debt burden for municipalities around mega-event related activities [43]. Many of these laws approve operations that do not encompass public concerns or social priorities. Municipal Decree 30.379/2009 goes as far as to ensure that properties belonging to the municipal government are available for use if they are essential for the 2016 Rio Games, even if they are occupied by third parties.

A slew of other legal decrees have been introduced to round out this exceptionality landscape. Whole new forms of criminal activities aimed at quashing protestors have been detailed under a new legal framework. They include defining associating with three or more people as forming an 'armed criminal gang'; the criminalization of protesting in proximity to a cultural venue; and the criminalization of the possession of materials such as bleach, flags, and gas masks [44]. The legislation is supported through expanded civilian monitoring and surveillance laws aimed at locating and identifying protestors. They are all attached to hefty prison sentences. The convening of special tribunals prosecute those not only involved in protesting, but those *suspected of potentially* committing a crime because of previous involvement with protests [45].

The government has created and partnered with a range of special security sectors to safeguard mega-event interests. These not only include the UPP, Special Ops troops, and the Armed Forces, but the Special Secretary for Major Events Security [46], and the Business Forum of Defense and Security (FEDS), a sector of the Industry Federation of the State of Rio de Janeiro (FIRJAN)—essentially Rio's Chamber of Commerce. That FIRJAN even has a Business Defense and Security Forum that consults with Rio's

Secretary for Public Security shows how deep the ties run between Rio's business sector and public sector interests. FEDS has close involvement with the Brazilian Association of Defense and Security Industries Materials, the National Union of Ordnance and Naval committees, and the Aerospace and Ground Force Forum. In 2015, FEDS called on the Secretary of Public Security to craft a coalition of private sector companies and government institutions (including the Court of Justice), to determine public security policy. This demonstrates how oligopolistic conglomerates in the defense and security sectors extend their influence in issues relating to these matters [47]. In 2011, this handful of private companies dominating Brazil's defense sector generated revenues of US\$2.7 billion [48].

These laws and affiliations between the private and public sector represent only a small rhizome of the complex array of local, state, and federal provisional measures, legal decrees, resolutions, ordinances, administrative acts and opaque business and political transactions that help craft Rio as a 'city of exception' at the expense of wider public interest.

The result is higher land values, rent increases and gentrification, the demolition of poor neighborhoods, forced evictions, and the displacement of residents [49]. These laws circumvent planning procedures and quash assembly and associational rights. They expend massive amounts of public funds on militarization; bankroll facilities of limited utility at enormous public cost; and orchestrate the sale or leasing of public services, utilities, and facilities to private interest groups. They consolidate a culture of accumulation by dispossession that is, in large part, facilitated by Rio's military police, and in particular, the UPP program [6].

9. Crafting Mega-Events: Legacy Projects and the Business Management of the City

Rio's various military police divisions, including the UPP, are connected to a broad set of economic goals laid out by the city as a set of urbanization strategies [50] that James Freeman defines as the business of building, preparing and marketing Rio as a mega-event city: the valorization of real estate, and securing the favelas as commodities and markets for commodities [6]. In other words, pacification is a structure through which public security policy paves the way for economic expansion through rapid urbanization.

The marketing of mega-events is about selling spectacle and image [36] in order to build a picture of Rio that will supposedly lead to years of return on the investment. It is big business, particularly for organizing bodies such as FIFA and the IOC, which profit from broadcasting rights, corporate sponsorship, product licensing, and ticket sales.

FIFA and the IOC, along with their corporate partnerships (Dow, Coca Cola, Visa, McDonalds, General Electric, Cisco, Embratel, et cetera [51]) co-brand with the mega-events to sell a very specific, packaged impression of Rio. This image is promoted as the exotic backdrop to the sports drama that unfolds on screen to billions of viewers to gener-

ate tremendous profit. FIFA received approximately US\$ 4 billion in broadcasting fees for the World Cup, the Olympics is expected to yield about the same [45]. In addition, Rio's local 2016 Olympic Organizing Committee predicts to receive around US\$ 0.5 billion in revenue from its sales of 'official merchandise' [52].

Protecting this painstakingly constructed illusion of the city—as advertised—is of critical importance. Disruption, and potential disruption of this image (violence, poverty, protests, et cetera) must be suppressed at all costs. Even the landscape surrounding the stadiums is of great significance. Olympic promotional material, for example, never portrays Rio's Maracanã stadium with the (pacified) Mangueira favela in the background; and residents of its neighbor—Favela do Metrô—have suffered under a slew of illegal housing demolitions [53] and forced relocations in order to produce a more desirable view [6]. Security perimeters are also established to lock down areas surrounding mega-event venues.

Several multinational giants of the surveillance and telecommunications sectors have profited from lucrative contracts to provide security equipment and technology to law enforcement divisions for mega-events. During the World Cup, teams of Armed Forces and Special Ops troops took control of the neighborhood surrounding Maracanã stadium. Missiles were placed on the roofs of condominium buildings and the terraces of private residences. Rio's new Command and Control Operations Center—in partnership with IBM—coordinated over 30 agencies in these operations, including the deployment of security forces. 157,000 troops were deployed throughout the country during the event to deter protestors at a cost of almost US\$ 1 billion. Though it is difficult to make an absolute determination, Brazil's total Public Works spending surrounding the World Cup and Olympics may cost as much as US\$ 1 trillion [45].

An array of money-spinning investment opportunities comes with preparing for mega-events. Rio's Olympic bid budgeted R\$ 29 billion (US\$ 7.25 billion) for revitalization of the city [6], though the figure could easily reach three times that amount [54]. The extent of redevelopment and the profits it generates for a handful of private interest groups is enormous. Leading up to the Cup, the rights to run and profit from five of the country's airports—including Rio's Galeão International Airport—were handed over to four private consortia for a period of 20–25 years [55]. The group that secured the rights to run Galeão is led by Odebrecht—Brazil's (and Latin America's) largest closely held construction and engineering firm.

Odebrecht also won four World Cup stadium contracts, including the R\$ 1 billion renovation of Rio's Maracanã stadium, financed with R\$ 1.5 billion (US\$ 447 million) of taxpayer money in the form of subsidized loans from Brazil's state development bank. Odebrecht is also part of the consortium that manages Maracanã; and one of its subsidiaries, Mectron, gained one of the hefty defense contracts to upgrade the military equipment used to secure its perimeter during events [45].

Though the company is currently under investigation for fraud in relation to overpricing its stadium work [56], Odebrecht continues to generate some of the largest profits from the orgy of mega-event construction currently taking place in Rio. It is part of a consortium that is profiting from the construction of the new R\$5 billion Metro extension and the contentious Bus Rapid Transit lines (BRT)—currently running at 46% over budget [57]. Though the BRT has been described as an example of 'sustainable transport', professor of urbanism Chris Gaffney claims the transit lines are designed to boost real estate speculation around the Olympic transit route while further fragmenting and isolating the poor [57]. These Olympic Legacy projects have resulted in the forced displacement of thousands of low-income residents, and driven profits through the roof for some of the city's largest developers.

The BRT goes right to the door of real estate development giant, Carvalho Hosken. The company has seen a "billion dollar jump" in the value of its real estate holdings in and around the Olympic site at Barra da Tijuca, thanks to Mayor Eduardo Paes, who has invested billions in public funds to build the infrastructure to enable the US\$ 1 billion Ilha Pura (Pure Island) Olympic luxury condo development, in which Carvalho and Odebrecht share equal partnership [58]. The social cost has been tremendous and includes violent removal of almost the entire Vila Autodromo favela [59]. Both Odebrecht and Carvalho Hosken were major political donors to the Mayor's reelection campaign [60].

Another project that very clearly depicts the connections between neoliberal construction schemes and accumulation by dispossession is the Porto Maravilha project—Rio's massive PPP (public private partnership) port revitalization venture. The plan has razed five million square meters of devalued housing and industrial facilities to build ten new 50-storey office buildings, residential towers, hotels, an art museum, the Olympic media facilities, a bus terminal, and a new dock for cruise ships, all serviced by a light rail system which will run exclusively around a small, internal circuit.

The area, most of which was public land, has been leased to the Porto Novo consortium for a fifteen-year term. Porto Novo is made up of three of Brazil's largest construction/engineering firms—Odebrecht, Carioca Engenharia and OAS—which will do the demolition, build the new infrastructure, and manage Porto Maravilha once it is completed. Federal FGTS pension funds, controlled by Brazil's federal public bank, are providing the R\$ 8 billion of infrastructure funding for the PPP, even though the pension funds are supposed to be used to develop social housing [61]. The city has evicted most of the 30,000 poorer residents from the port area and the Providência favela located in the hills directly above it to accommodate the project. Authorization for Porto Maravilha passed without public approval within weeks of Rio winning the Olympic bid.

These projects are all examples of how rapid urbanization, in service of mega-events and their 'legacy' projects, remove and control populations under what can be only considered a 'state of exception' [62]. In contrast to the

city's claim that the "Legacy Games" will "transform old problems into opportunities" [63], it seems the main legacy of the Olympics may be displacement.

Legacy projects comprise the largest share of the city's Olympic budget, and are foundational to the city's economic redevelopment objective of urban revitalization through sustainable development. This objective, according to the municipality, can be effectively met through good governance and PPPs that harness citizen participation [64]. Yet Rio's stated goal of becoming a sustainable city through community policing, financing urban revitalization, and economic growth [50] faces grave challenges.

It is estimated that up to 110,000 removals will have occurred throughout the city by the time the Olympics begin. In addition to the removals, the city has a low-income housing deficit of 300,000 homes [65]. Housing relocation and compensation is inadequate at best. Guilherme Simões, national coordinator for the Homeless Workers' Movement, claims if gentrification is taken into account, there are 800,000 families now without a home within Rio's metropolitan area thanks to the legacy of mega-events [66]. Those that remain in favelas still live with no access to sewage—resulting in waste from more than 50 rivers and streams of raw sewerage, along with tons of garbage, being emptied directly into an already chronically polluted Guanabarra Bay every day [67]. Public security also presents an escalating problem, with both violent and non-violent crime on the rise [68].

With the country heading into negative economic growth—meaning more unemployment, higher utilities, services and transportation costs, increased taxes, and rising inflation [69]—this situation is set to worsen. Furthermore, though political rhetoric touts Rio as an inclusive city [70], there are no participatory mechanisms built into the framework of public policy decision-making. This means there are few alternatives to the myriad of 'segregation' policies being put in place around the Olympics [71]: housing evictions and substandard relocations to the periphery, the severing of dozens of bus lines and police blitzes that deter people living in the poorer North Zone from traveling to the affluent South Zone on weekends; the walls being built around the favelas to contain them; the police violence and intimidation that accompanies illegal evictions, and so on.

Inclusivity of the favelas under the UPP is typically achieved through the issuing and military enforcement of State imposed *choque de ordems* (shock orders) that crack down on informality by evicting residents or forcing them to regularize (comply with official registration and licensing requirements) real estate holdings, businesses, utilities, and services [72]. In this way, the UPP, according to official literature, binds community policing to economic development [73].

Global justice researcher, Rafael Dias, asserts that these policies are part of a "business management" model of the city, "designed and executed by the government without any participation" to accommodate "specific interests, which cannot be confused with the interests of society as a whole or human rights in general" [74].

10. The Role & Function of the UPP Social Program

The Municipal Institute of Urbanism (Instituto Municipal de Urbanismo Pereira Passos or IPP) oversees the social administration of the UPP under a division known as the Rio+Social or UPP Social [75]. As described in Rio's municipal development plan, its function is to coordinate various municipal agencies to help achieve social and economic development goals [50]. Generally, this process occurs at the nexus of pacification, urbanization and mega-events.

The IPP maps municipal data, manages information, and advises on municipal public policy [76]. Specifically, it identifies municipal initiatives for economic investment and advises on the needs of, and where best to locate social assets. It also coordinates corporate-sponsored 'cultural' events (Figure 2).

Development specialist, Robert Muggah, has criticized the UPP Social program for not putting emphasis on service delivery, and for its lack of capacity to respond to local demands [78]. The program is far from ineffective, however. IPP Director, Eduarda La Rocque, admits that the UPP Social services "the priorities... of the city of Rio de Janeiro as a whole... [not] what the favela wants" [79].

The IPP is the department that provides the city with the information necessary to plan and carry out its regularization activities in the favelas. Regularization is accompanied with promises that registered entrepreneurs and vendors can access the formal market through being eligible to apply for microcredit and job training provided by PPPs. To date, however, out of the 1.5 million people the government claims to have benefited from pacification [2], only 2,027 micro-entrepreneurs have been formalized, and only 5,000 have received access to micro-credit [80].

Shock orders also require home and business owners to formally obtain land titles for their homes or businesses (a five-year heavily bureaucratized process), and/or licenses for commercial activities (a three day online approval process)—or face being shut down. Land regularization comes with the cost-of-living increase that property tax brings. In addition, landowners and tenants alike must manage sudden and sharp spikes in the cost of utilities and services that regularization brings. These are many times higher than what is affordable for most favela residents. Electricity prices alone have jumped 1400% in some favelas (from US\$ 20 a month to US\$ 299) [81]. In this economic climate, even if a favela resident is fortunate enough to have full-time employment (earning minimum wage of around US\$ 225 per month), they will likely be priced out of their homes.

Though land regularization and urban upgrading are important first steps for integrating favelas into the formal city, it is important to critique if and how regularization functions to impact the informal sector. Regularization and slum upgrading are, in themselves, meager rights to strive for. As urban planner Mark Purcell puts it, "not just housing but decent and affordable housing, not just jobs but good jobs, not just transportation but efficient and convenient

transportation” [42] are necessary to ensure what Lefebvre conceived of as ‘the right to the city’ [82]. Regularization in Rio, rather than bringing stability, is bringing financial strain to an already fragile economic environment.

Another function of the IPP is to identify ‘geo-risk’ housing—those structures vulnerable to flood, landslide, or collapse. The Mayor’s Morar Carioca slum upgrade program uses ‘geo-risk’ as a tactic to validate evictions through “the elimination of risk areas [and the] resettlement of residents”. Even though the program charter guarantees the right of civil “participation. . . in all stages”, residents are not consulted in this process [83].

Rio’s evictions in relation to mega-events have directly affected almost 70,000 individuals [84] and put up to 40,000 more at risk [85]. The process is being accelerated through a policy of lightning evictions introduced in 2015 to secure favela property for economic development activities for the Olympics. The evictions are typically enforced by police who are deployed in legally dubious maneuvers with operational teams that cut electricity, remove residents, and bulldoze neighborhoods, sometimes with little to no warning [86]. Dispossessed residents and their neighbors are merely left with abandoned piles of rubble that exasperate threats to health and safety (Figure 3) [87]. Many are unable to resettle in the same neighborhood because of the increase in the cost of living brought about through pacification.



Figure 2. Functions of the Instituto Pereira Passos [77].



Figure 3. Partially demolished housing, Manguinhos favela, 2015.

Together, pacification and urbanization have led to a substantial rise in the real estate and rental markets in and around favelas. The perceived reduction in crime associated with the presence of the UPP also drives up the price of real estate both inside the favelas, and in the surrounding *asfalto* neighborhoods. This real estate spike has led to an overall increase of approximately 15% across the formal city as a whole between 2008–2011 [19]. In favelas, the jump has been as high as 300% [88].

Rafael Gonçalves claims the ultimate goal of the UPP, may above all, be to provide security for real estate speculation [89]. The rhetoric of pacification—of fighting crime, restoring peace, and bringing prosperity—socially engineered through mainstream media, Brazil’s public institutions, and global organizations such as the World Bank [90], aims to create a perception of Rio as a safe and thriving city, attractive to both investors and tourists alike.

11. Assessments and Perceptions of Pacification

A broad body of various literature, studies, media, data, and information produced and disseminated through various means by scholars, mainstream and independent media, NGOs, government, and international organizations, reflects the overwhelming challenge of accurately evaluating the many facets of an ever-evolving pacification campaign and the urbanization activities related to it.

At first, the results of the UPP occupations seemed positive. Ignacio Cano’s 2012 report, *Os Donos do Morro*, quantified the program’s impressive impact on registered crime. Cano showed a dramatic drop in homicide rates inside the favelas, and pointed to this facet of the campaign as an unprecedented success [91]. This reduction in homicides bolstered the overwhelming support already bestowed on the program by the city’s ruling elite, middle classes, and mainstream press.

Surveys conducted in select pacified favelas through 2012 also suggested that residents perceived a general improvement in security, but that they also feared the government would abandon the favelas after the Olympics and that traffickers would return. In addition, the surveys identified a lack of community facilities and services in the areas of health, education, and leisure, as well as problems associated with the relationship between community members and police, and in levels of crime other than homicide [28].

Gradually, the praise the UPP had received during its first few years began to wane. The mediascape started to expose cracks in the UPP as the 2014 World Cup drew close, and new assessments of data began pointing to rising crime (up by 116% in Niteroi in 2013) [92]; increases in conflict [93]; and a slew of human rights violations [94]. Scholars began cautioning against any euphoric adoration of the UPP policy [95]. Esther Werling’s HASOW report [28] determined that the UPP did not represent a paradigm shift in public security policy at all, but was merely a continuation of vertically structured intervention and historical segregation. Robson Rodrigues concluded that the policy was

embedded with structural inequalities and instituted without dialogue or effective participation [96], and the citizen-led movement, Rio Com Vamos, declared a lack of institutional reform both in the police and the criminal justice system. This, Rio Com Vamos charges, contributes to a culture of violence and corruption that dominates Rio's political landscape and affects how it plays out in the favelas [97].

Marcelo Baumann Burgos' 2012 case report, *O Efeito UPP na Percepção dos Moradores das Favelas*, studied favelas in close proximity to those presented in this paper. His report concluded that if the State's perpetual culture of legitimized violence could be overcome and trust between police and residents restored, the UPP may open up a social space where the citizenship rights of the informal sector could be affirmed. He suggested that if this perception could be turned into organized opinion, a fracture may occur in the current institutional model (based on the violent social control of the urban poor), and transition to a model which operates under the language of rights [20].

However, with the UPP losing funding with the phasing out of Pronasci (the federal program which supplied its multi-year seed funds), and the collapse of the campaign's largest corporate contributor, the EBX Group in 2012 (now bankrupt and under federal investigation), it is doubtful the UPP can continue to occupy the favelas after the Olympics in the way as it does now (if at all). Though the city remains silent on the issue, it is evident that the UPP is already having trouble holding onto much of the ground it has gained.

12. Scope, Delineation & Methods: An Introduction to the Case Reports

Three case studies implemented in and bound by three different favelas were selected for this report. Each explores police occupation, social interventions, and economic development activities and their effects on favela residents and the territories in close proximity to them.

The case studies have been chosen because of the variance they offer: each has been pacified for a different length of time; each has a different socio-economic level; each is varied in population size; each deals with different levels of violence; and each is situated in a different geographical area. All were controlled by drug trafficking gangs prior to pacification.

- i) Babilônia/Chapéu Mangueira, two small higher-income earning favelas located in the affluent South Zone neighborhood of Leme (pacified in 2008). Previously under control of the Terceiro Comando (TC) drug trafficking gang;
- ii) Borel/Formiga, a middle-income North Zone cluster of favelas located in the middle-class neighborhood of Tijuca (pacified in 2010). Previously under contested control at different times by both the Comando Vermelho (CV) and the Amigos dos Amigos (ADA) drug trafficking gangs;
- iii) Manguinhos, a large, poor North Zone cluster of ten to fifteen favela neighborhoods (pacified in 2012). Previously under control of the Comando Vermelho (CV) drug trafficking gang.

Because this study focuses on only three of the 38 favela communities under UPP control, it is limited in its scope and ability to generalize. In addition, though it tries to take into account a large number of shifting dimensions, the conditions inside favelas are subject to an ever-evolving set of precarious and fragile social variables. This renders it impossible to measure the overall impact of pacification in definitive terms. Its aim is, therefore, to more intimately convey how the UPP operates, how it enables urbanization activities, and how residents are being affected within these three pacification scenarios.

Due to incongruities and unreliability of available data due to official underreporting, and the inability to acquire accurate quantitative information inside favelas, this case-study impact report used a mixed methodology approach based on multi-year qualitative field research that was cross-analyzed against a range of empirical data. The qualitative research was conducted while the author was working in land use restoration projects in favelas with favela residents from 2010 through 2015 [98]. The information is derived from direct observations, conversations with favela residents, meetings with citizens' committees and Residents' Associations, interactions with drug traffickers, UPP officers, PAC workers, and municipal stakeholders, including the Department for the Environment.

Empirical research, also conducted between 2010 and 2015, includes an examination of articles of law, statistical data [99], municipal and state development plans, architectural design documents, human rights reports, and mainstream and independent media reportage. Participation in conferences and reviews of literature produced by other researchers engaged in analyses of Rio's mega-events and urbanization activities also provide a foundation and counter-balance for the case reports.

13. Case Report: Babilônia/Chapéu Mangueira

The cluster of favelas that include Babilônia and Chapéu Mangueira are nestled into the mountainsides of the wealthy neighborhood of Leme, located at the end of Copacabana beach, the most popular tourist destination in Rio. This privileged location provides favela residents easy access to the largest service and construction industries' job market in the city. Many of the women from these favelas work as maids and nannies for the wealthy residents of Rio's affluent South Zone, while the men provide the labor as the construction workers and bricklayers who build the high-rises that dominate the dramatic beachfront skyline.

Over the decades, the residents of Babilônia and Chapéu have not established prominent labor or union associations. Instead, their political agency has tended to be rooted in the favelas themselves. These favelas have always been the proving grounds for State interventions, including the UPP, because of their small scale, their relatively low levels of conflict, and their spatial and social proximity to those who draft the public policies implemented in them.

Babilônia has the best socio-economic indicators among

the three case studies analyzed in this report, with a high Social Development Index [1] and well developed infrastructure when compared to other favelas in Rio. There is almost complete access to water, sewage and garbage collection in these two communities, and approximately 75% of residents are homeowners. Despite such high social development indicators, illiteracy remains a problem, particularly in Babilônia, where 15.9% of the population older than fifteen is illiterate [100].

This area has had one of the most harmonious relationships between a trafficking-dominated favela and its surrounding neighborhood. Up until the mid-2000s, drug-related conflicts were rare, *baile funks* (dance parties) were attended by middle class youth, and there had been little adverse effect on the formal real estate market in Leme. By 2005 however, the favelas had suffered a series of attempted takeovers by enemy drug factions, and relations between the formal and informal communities began to strain under the stress of frequent gunfire.

In May 2009, Special Ops Military Police moved in to occupy the two hills of Chapéu and Babilônia, making arrests and seizing drugs and arms. By June, the UPP had established their headquarters in the upper reaches of Babilônia, and 107 UPP officers were installed to oversee 3,740 residents [14]—a ratio of one police officer per 37 people. Though Rio's Mayor Eduardo Paes and State Governor Sérgio Cabral both came to Babilônia to formally inaugurate the historic event [101], residents were not informed of the community ceremony. This demonstrates, in a most basic way, how favela residents are left out of even the smallest of public gestures.

The relative success of Babilônia's pacification is often emphasized as part the sustainable legacy of the city's mega-events. Many sustainability initiatives were implemented in Babilônia in preparation for the United Nations Rio+20 Sustainable Development Summit. Under Rio's Morar Carioca Verde program, designs were drawn up for new housing, a commercial center, and a cultural center, along with weatherizing interventions in private homes, plans for household waste management and recycling systems, and water and energy efficiency improvements (LED lamps, solar water heaters, rainwater collection systems). Reforestation of the surrounding area was also planned so that tourists could access trails with locals serving as guides.

By the end of 2013, sixteen 'green' houses had been built, an LED pathway installed, and almost 200,000 seedlings planted [102]. 60 homes were also demolished [103]—without consulting residents. The cost of the project in total was R\$ 43 million (US\$ 23.5 million) [104].

Another initiative, the corporate-funded Sustainable City project, also launched around the same time to coincide with the UN Rio+20 mega-event. The project included a housing improvement program that trained 110 participants as masons, electricians, plumbers, and locksmiths; fifteen volunteers were given classes in domestic-scale agroecology; and residents were offered a community tourism program that resulted in dozens of tourism operators being

'regularized'—sanctioned by the government.

One of the great social promises of the UPP was that it would bring jobs opportunities for residents, however very limited forms of micro-tourism may be one of the only ways in which this promise has actually been delivered. There are a few local tourist guides in the more accessible South Zone favelas, and in Babilônia and Chapéu Mangureira, the community has a registered tour guide cooperative designed to take tourists on the nature trail up through the forested hillside. Some residents complain tourists do not bring much money into the community while others see it as a small opportunity. A few small-scale private initiatives also offer cheap accommodations to foreign backpackers wanting to stay in favelas, though most are run by foreigners, and only one by local residents. The favela is brazenly advertised in the UPP Social's promotional video, which depicts a group of gringo tourists happily being served by a local proprietor as the only patrons in the restaurant [105]. Babilônia may have become the UPP's poster child for local business success delivered through pacification, but residents and critics alike claim it is little more than urban propaganda [106].

Babilônia provides the city's most sanitized location for dignitaries to be taken to see a tranquil image of Rio's pacified favelas. Former New York City Mayor Michael Bloomberg was ushered through the favela during the UN Rio+20 Summit to see the success of pacification and of the Morar Carioca Verde program. In the forty minutes he was there, he did not interact with a single resident.

According to the IPP, about 4,000 residents overall have benefited from infrastructure and urbanization programs in the Babilônia and Chapéu under the UPP. However, many challenges still persist. Education remains a problem. Municipal school enrolment numbers decreased by 15.2% between 2007 and 2010 [107]. Housing also presents barriers to stability. Some residents have waited years for regularization approvals, while others have been forcibly evicted, received low financial compensation for relocation, or been forced to move to the periphery (a three hour commute back to the city) [108].

Next to the favelas, in the *asfalto* neighborhood of Leme, residents whose apartments faced Babilônia/Chapéu Mangureira suffered from the negative effect the communities had on their property values prior to the UPP occupation. Many also felt at risk of being injured or killed by stray bullets, with some apartment owners installing bullet-proof windows as a protection measure [109]. Following pacification, however, Leme saw a real estate boom with property increases of just under 35% in 2011 alone [110]. Inside the favela, Babilônia's real estate prices more than quadrupled by 2012 [111].

Despite the urban upgrades these favelas have received, residents in general remain conflicted about the pacification, not only because of gentrification, but because of the way in which citizen involvement in decision-making processes is neglected, and because the implementation of most social programs is isolated to coincide with major international events [79]. Other complaints charge that access to

community facilities, such as sports complexes (previously open for use 24/7) are now micro-managed by the UPP and require a lengthy bureaucratic approval process and advanced scheduling before entry to them can be gained. Community entertainment is either subject to restrictions such as curfew, or is banned altogether, as is the case with *baile funks*, which have been made illegal under UPP policy.

Public security remains somewhat volatile, however the level of conflict is low compared to the other case studies discussed in this paper. Though there has been a great investment in policing [112], exchanges of gunfire between rival gangs sporadically continue [113]. The UPP has been effective, however, in limiting the visible use of firearms by teenagers, and if it can be sustained, this change alone will have a significant social impact on the younger generation growing up in this environment [114].

Babilônia's residents are no strangers to public/private investment experiments with the State, and no doubt many have benefited by these programs. In many respects, because they are small favelas with relatively low levels of conflict, the UPP interventions in Babilônia and Chapéu have, to date, been more effective than in the other case studies discussed below.

14. Case Report: Borel/Formiga

The Tijuca favelas are a cluster of small favela communities located in the North Zone of Rio de Janeiro. They occupy the social middle ground somewhere between the economic privilege of Babilônia and the impoverishment of Manguinhos.

Complexo do Borel comprises of three communities—Borel and Casa Branca, situated on the hillside slopes, and Chácara do Céu, at the top of the hill. Formiga is another part of the favela cluster, located on a nearby hillside along a winding road. It is one of the oldest and steepest communities in the area, and has a high level of built density. Formiga originated as a formal subdivision that was later declared illegal. Borel also originated as a formal occupation, with residents being relocated to the hills from the city center in early favela removals. Other relocations followed in the 1950s.

Associational life developed historically in this area as part of the struggle against the city's removal policies. It later evolved to advocate for education, health and leisure facilities. The development and sense of political agency of these favelas has been deeply entwined with labor movements and unions. This was where the city's first community association, the Union of Favela Workers, was formed in 1954. It has since served as an important example for other neighborhood associations.

Over the years, adding to the conflict that has to do with forced removal and relocation, residents have had to contend with intense violence erupting between rival gangs for the control of favela territory. Over a period of twenty years, the predictability of the conflict between these favelas had become so commonplace that it developed certain regu-

larities, including the scheduling of armed engagements, which came to be known as "shootouts at an agreed upon time" [1].

The ongoing conflict translated into a series of limitations on residents' mobility across the city. Territorial disputes over the *bocas* (drug selling points) broke apart the communities that had once been perceived as extensions of one another. These favelas had shared a long history of unified political mobilization and social life spanning from family relations to religious ties, from participation in one of the oldest and most traditional samba schools in the region (Unidos da Tijuca), to the attendance of *baile funks*, the dance parties now banned under the UPP.

The banning of *baile funks* is complex issue. Funk Carioca (funk music from Rio de Janeiro) originated in the favelas in the 1980s, and by the 1990s *baile funks* had become popular community events. The UPP takes the position that *baile funks* promote drug culture and gang affiliation among youth. Because the *baile funks* are often hosted by the ruling gang, the use of drugs and the presence of traffickers have been prominent at such events. Social analysts claim, however, that banning the parties, which extends to the banning of funk music in general, shuts down an authentic cultural expression of favela youth [115]. Both sides of the argument can be legitimized.

In the case of the Tijuca favelas, the rift between rival *baile funk* scenes (associated with the rivalry between gangs), greatly altered the social panorama of the entire area. By the end of 2009, attending a Friday night *baile funk* came with the added risk of gun violence because both the ADA and the CV gangs were involved in an intense territorial war for control of the different hillsides [116].

Because of the gang wars, the close ties that had traditionally linked these favela communities were progressively cut off from one another. Factions marked favela residents with gang identities, and prohibited their mobility through rival territories. Residents were compelled to change their commuting routes in order to avoid entering 'enemy' territory. These turf disputes spilled over into the formal city to impact nearby public schools. By the mid-1990s, drug trafficking violence had led to a radical depreciation in property value for buildings that faced the favelas, with real estate prices plummeting to the point that they were virtually equal to that of the favelas [117].

By the time the UPP advanced in these neighborhoods, residents had already anticipated their pacification with high expectations. Borel's UPP occupation was the eighth established in the city, and the first in Rio's North Zone. In June 2010, the UPP entered Borel. By July, Formiga was also occupied. UPP units, with 500 military police officers in total, now occupy seven Tijuca favela communities, controlling an area that is home to approximately 60,000 inhabitants.

The UPP directly oversees about 12,815 residents from the favelas, with troops operating at a ratio of one officer to every 33 inhabitants [2]. Due to the built density of the area, the steep geography, and the social complexity of relations between residents, traffickers and police, the dif-

facilities the UPP face to remain in control of territory are substantial. Moreover, the Social Development Index for this area remains disturbingly low (0.468) [118].

In 2012 (and again in 2014), the Governor of Rio announced the favelas of Borel, Formiga and Salgueiro would receive up to R\$ 170 million (in excess of US\$ 55.5 million) in infrastructure funding, allocated by Brazil's Growth Acceleration Program (PAC 2) [119]. The funding is to provide water supply, sewage treatment, drainage, and garbage collection to new housing units for 500 families. The plans also include the widening of streets, a inclined plane service, an art school, a sustainable architecture center, a culture and sports center, a daycare center, a technical school, plus a job training center [120].

The program was announced as part of US\$3 billion in federal funding allocated to provide five municipal housing complexes. Rio's State Public Works Company (Emop), named as the project's contracting agency, says it will employ about fifteen thousand construction workers, most of them from favelas, for the projects. However, residents complain that there is no real government interest in creating employment and that workers must stand in line for hours in order to register for very low paying jobs [121]. Emop also claims that the planning process was participatory, though this semblance of involvement was, at best, ostensibly superficial (for example, children were invited to draw pictures of what they would like to see in the neighborhood) [120]. Groundbreaking on the projects was to start by December 2014, yet by November 2015 no contracts had been tendered.

Emop and PAC have both been the focus of a series of civil protests in connection with the forced evictions that surround Rio's mega-events [122]. PAC projects are notorious for overpriced bidding, poor design, and never getting off the ground. If they do get past the planning stage, they are plagued by cost overruns [123], shoddy construction [124], half-finished abandoned work, and corruption. Corruption in Brazil equals 2.3% of the GDP annually. In 2013 alone, it is estimated to have cost the country US\$ 53 billion [125]. Between 2007 and 2013, it was calculated that more than R\$ 7 billion (US\$ 3.3 billion) of PAC funding was misappropriated [126]. In fact, none of the R\$ 2.6 billion (US\$ 880 million) of PAC favela infrastructure funding announced to break ground in 2013 progressed beyond the planning stage [127].

In Borel, residents are frustrated with the government because of the lack of effectively implemented infrastructure works. Alleys remain unlit, there is still no sewerage system, and trash litters the streets. The general lack of water has become so critical that it has sparked protests. The community continues to demand improvements to the state water and sewerage company's (CEDAE) "Water for All" program. Residents say, however, that there is no such program and that various parts of Borel simply do not receive water for prolonged periods, despite residents being presented with water bills to pay. In addition, the community claims distribution pipes lie unutilized in ditches, and the equipment used to pump water needs maintenance in order

to function [128].

Whatever little progress has been made within the Tijuca favelas, the UPP and the urbanization activities that are generated alongside it have brought great benefits to the middle class neighborhoods that surround the favelas. Property prices in Tijuca are the most symbolic in the city for attracting real estate investments. After pacification, property in Tijuca appreciated 161.4%. In 2008, one residential square meter of Tijuca real estate was worth around R\$ 2,000. In 2010, it sold for R\$ 5,500 per square meter, and a year later for R\$ 6,500. João Paulo Matos, president of Caçuda Construction, admitted that without the UPP the company would never had achieved these sales prices [117].

Though Tijuca's middle class is reaping the benefits of the pacification, challenges related to infrastructure, the general restoration of public order, and the corruption within the UPP, remain acutely visible inside the favelas. Residents remain generally unsupportive of the UPP, but in Borel the situation is especially fragile [129]. In December 2012, a group of youth mobilized as "Occupy Borel" in protest against the mandatory curfew imposed by the UPP. The youth demanded entitlement to come and go freely from the favela, claiming that now, more than ever before, they were unable to move through their community. A coordinator of a religious organization in Borel also claims that many adolescents—those aged between 11 and 18 who previously worked in the *bocas*—are now aimlessly roaming the favelas as outcasts constantly harrassed by police [130]. UPP-imposed arbitrary curfews, police brutality, and the illegal taxes extorted by UPP officers [131] continue to spark human rights protests and paint a portrait of state oppression that has become familiar to Borel residents over the years.

In Formiga, things are different in regards to public security. Formiga is a small favela, with 4,312 residents governed by 111 UPP officers [2]. Because of its size, Formiga has possibly been easier to pacify. This has been one of the most successful implementations of the UPP in Tijuca. The UPP in Formiga has resulted in less conflict than the other pacifications in the area, and security concerns are lower in comparison with the other favelas [132].

On the whole, the UPP has improved the Tijuca communities by stopping, if only temporarily, the regularity of violent conflicts between the police and armed groups, and between rival gang factions. This has produced an immediate relief in the daily lives of many residents, many of whom have been caught in the crossfire, literally, for decades. However, as the violent character of policing in general continues, citizens of these areas still need to be vigilant in regards to their security situation. As well, they must overcome the obstacles put up by the government and police that prevent them from receiving adequate attention in regard to their complaints concerning the lack of adequate infrastructure improvements, social freedoms, employment opportunities, and civic participation in decision-making. This scenario mirrors the overall criticisms leveled against the UPP by human rights critics of the program [74].

15. Case Report: Manguinhos

Manguinhos is located around an old industrial suburb in the North Zone of Rio. It has been intricately connected to the favela removal efforts since the 1940s—as an area to which people were relocated to after they were removed from other favelas around the city.

The Manguinhos Complex is a cluster of fifteen favelas and housing projects inhabited by a population of 35,000 people [2]. This large complex is located in close proximity to many other densely populated favelas that weave a fabric of irregular housing across the sprawling North Zone of the city. The flat landscape of Manguinhos extends as far as the eye can see, enmeshed with the ruins of derelict and abandoned factories turned into ‘occupations’ and incorporated into the favela landscape along with the government relocation housing projects built in the 1970s.

Manguinhos is today hemmed in by a series of open sewers that once flourished as healthy rivers, and a labyrinth of highways and super-highways overflowing with traffic. The favela is located under live, high voltage transmission lines next to an elevated train track. The area is plagued by floods, urban waste and toxic pollutants. Numerous environmental risks afflict the residents of Manguinhos, and in particular its youth, who are 500 times more likely to develop cancer and neurological disorders because of exposure to high levels of lead that pollute the area [133].

The demographics and poverty indicators of Manguinhos are dismal. The Human Development Index is 0.65%—among the five lowest in Rio. 15% of girls between the ages of fifteen and seventeen have children. The monthly per capita income for 2012 was R\$ 188 (US\$ 60), and unemployment rates languish at between 30–50% [134].

The demise of industry in Manguinhos from the mid-1980s on resulted in an intensification of the drug trade. The favela’s location at the core of a vast region dominated by the CV gang secured Manguinhos as a trafficking stronghold that held both the police and rival factions at bay. Thus the boldness of the drug trade’s appropriation of the public spaces of the favela reached new heights.

Referred to as Rio’s ‘Gaza Strip’, Manguinhos was the site of the city’s largest *crackolândia* (crackland) and one of its most violent drug trafficking centers. The situation was, for all practical purposes, a full-blown internal armed conflict and the ultimate representation of Rio’s urban warfare issues. The organized drug trade, open conflict with rival factions and/or conflict with State military forces, laid bare the humanitarian impact on civilians trapped by daily violence. From public executions to police shootouts with Special Forces units, Manguinhos was the pinnacle example of gang rule [135].

The drug trade had taken root to the extent that the *bocas* had become a long string of shanties, littered with broken couches and old mattresses, where crack addicts of all ages prostituted themselves, and where makeshift lean-tos provided shelter for the crack dealers who worked, literally, behind the counters of stalls originally used by vendors in the farmers’ market. Drug culture spilled over to the

bars and brothels and into the streets, to permeate almost every aspect of community life.

The heightened visibility of the drug trade in Manguinhos can be attributed to the uncontested hegemony of the Comando Vermelho, the oldest drug faction in the city, where the gang leadership was least vulnerable to enemy invasions. The CV’s operations, including the stockpiling of weapons and the regional distribution of drugs to the favelas city-wide, were centered in the nearby Complexo do Alemão favela until late in 2010 when the UPP took control there. Manguinhos subsequently absorbed the bulk of CV operations, including its headquarters. This increased the already large-scale visibility of the drug economy and elevated the flow of drug migrants into the favela.

The social landscape of Manguinhos visibly changed in October 2012, when BOPE units stormed in with 1,300 troops assisted by helicopters and tanks, to smash through whatever obstacles were in their way and symbolically liberate the favela from the stronghold of the CVs. The UPP consequently installed 588 officers in Manguinhos, one for every 60 residents [2]. The shacks of the *crackolândia* were demolished and addicts were deposited in shelters for a few days before finding their way back to the streets [134]. Though the physical armed presence of the CVs no longer dominate the landscape, they still remain highly active in the area (Figure 4).

Even before the favela’s takeover by the UPP, a large-scale urbanization project was well underway to redevelop the area that surrounds Manguinhos leading up to the Maracanã Sports Stadium. Funded by PAC, the urbanization project began in 2008 and is coordinated by the State Ministry of Works (Seobras), in partnership with Emop. According to the State Department of Finance, the total PAC investment between 2008 and 2010 was around R\$ 3.1 billion (US\$ 1.6 billion). Among the works delivered in 2009 was a 35,500 square meter Civic Center located on the grounds of a new mid-rise housing complex built on the grounds of the old Army Supply Depot (DSUP). The Center included a library (with a theater and cinema), a recycling facility, an ‘income generation center’, a health clinic, a women’s social service center, a legal aid center, a sports court, and a high school attached to a swimming pool known as the ‘Manguinhos Water Park’ [136].



Figure 4. CV tags on home exteriors, Manguinhos, 2015.

According to some residents, the project initially brought some gradual improvements to the neighborhood [137], but many services, including the library, the swimming pool, and the youth center, have already been shut down, or operate in a reduced capacity, due to lack of funding. The abandoned Army Supply Depot warehouse has been left standing in a dangerous and derelict state for children to explore, little sports activity takes place on the courts, the kiosks built for commerce have never been used, there is trouble having mail delivered to the housing complex, the homeless sleep outside the health clinic, and the high school is overcrowded with up to 50 students per class.

The swimming pool, in particular, is a prime example of the gulf between political rhetoric and service delivery. The project was initiated after a thirteen year-old Manguinhos teenager photographed swimming in a mud puddle went viral. In response to the public embarrassment, former President Lula announced a community pool for the people of Manguinhos. The Water Park was subsequently built along with the high school and inaugurated in 2009 with the President in attendance at the opening ceremony.

Despite the political bombast, however, Manguinhos residents and students are denied access to the pool—which is enclosed by a high wall patrolled by the UPP—because, according to the State Department of Education, people were “smashing the place”. Witnesses have reported UPP police beating youth attempting to access the pool [138], which now sits abandoned and filled with stagnant water. Without a leisure area to experience respite from the heat (which reaches up to 47° C), children continue to swim in the rivers that the untreated sewerage runs into [139].

Though the Youth Center was closed almost as soon as it was opened, the income generation centre, run by the Technical Support School Foundation (FAETEC) has offered limited vocational training to people interested in becoming a stock clerk, a hardware store owner, an administrative assistant, a hairdressing assistant, a construction laborer, an electrician, a plumber, an air conditioning unit installer, a manicurist, a solar heating installer, a computer maintenance technician, a tiler, a brickworker, a painter, a telemarketing operator, or a CISCO technician. Other courses periodically offered have included basic computer operation, English and Spanish. The Ministry of Science and Technology has invested approximately R\$ 1.25 million in the project [140]. Through FAETEC, 12,000 vocational training vacancies have been offered in UPP occupied areas throughout the city. The goal is to train people with the skills necessary to service “the needs of the corporate world...in partnership with the Rio 2016 Committee” [141]. Graduates are supposedly to be contracted to supply labor for the Olympics, yet even this meager opportunity seems unlikely, given the Olympic budget was already slashed by 30% a year out from the Games [142], with cuts continuing to become deeper and more extreme as the Games get closer [143,144].

Despite the failures of the DSUP housing complex, most residents agreed that the library provided extraordinary ben-

efit to the youth of the community, and would like to see the discontinued services restored, though none hold out hope that they will be [145].

Another project now in jeopardy due to a municipal budget shortfall is the Manguinhos food garden. The kilometer long stretch of what had been part of the *crackolândia* before the occupation, has subsequently made way for the largest experiment in urban agriculture the city has ever seen. Approximately R\$ 500,000 (US\$ 166,500) of funding was allocated through the municipality and PAC [146] to develop the large-scale garden, created by the Department for the Environment’s Hortas Cariocas program—an organic agroecology project based in the favelas and public schools of Rio. The garden is overseen by Hortas Cariocas, and run by Manguinhos residents, whose names were put forward for employment by the local Resident’s Association.

The project advanced as a PPP between Hortas Cariocas, the Mayor’s Office, the electric utility Light (which has granted legal right to use the land under the transmission lines), and the Manguinhos Residents’ Association. In addition, a community volunteer section (working mostly with resident retirees and children) was established with the help of Green My Favela. Around twenty Hortas Cariocas employees each receive a stipend of R\$ 380 a month to work in the garden. All gardeners take home produce regularly from the garden, and contribute to feeding some of the more vulnerable community members. Hortas Cariocas also donates to local school lunch programs, and is beginning to sell produce at local farmers’ markets. The Manguinhos garden has been operating since early 2014 (Figure 5).

One of the primary actions in the PAC redevelopment of Manguinhos has been a two-kilometer long elevation of the train track. Architect Jorge Jauegui, who won the Morar Carioca contract to design the redevelopment [147], believes the project is a “social connector” for the community. Jauegui even dubbed it the “Manguinhos Rambla” (in reference to Barcelona’s La Rambla). The train track is a far cry, however, from being a public space of “socio-spatial regeneration” [148]. The undertaking has resulted in the forced relocation of almost 700 families [149].

Before its demolition to make way for the venture, residents of Beira Rio (a little Manguinhos neighborhood close to the river and train tracks) had managed to develop a modest infrastructure which included bakeries, a kindergarten and a church. Many residents were not even informed of their impending removal and none had any input in the process. They were simply confronted by armored vehicles and police raids ordered by Governor Cabral, and told to leave their premises [121]. In 2013, 900 families suffered a similar fate when they were removed to make way for a nearby sports complex [122]. The area under the elevated train track now functions as a homeless camp, budding crackland, and an area of prolific drug dealing where conditions are unsafe and unsanitary (Figure 6).



Figure 5. Hortas Cariocas organic food garden in Manguinhos, 2015.

Residents facing removal must accept minimal compensation to abandon their homes and relocate further out to the periphery of the city or resettle in the same area at far greater cost in the PAC social housing schemes. PAC has invested R\$ 567 million (US\$ 183 million) in building three new PPP social housing complexes in Manguinhos [150]. These complexes are essentially vertical, mid-rise favelas beset with infrastructure problems. Not only have the people of Manguinhos been denied any participation in the planning of the redevelopments, but attempts by residents to formally organize and insert their voices into the process have been deemed illegal and shutdown by the city [134].

Since pacification, home prices in the area have increased 500–600%, forcing many to relocate a further 40 km from the city center. Some have resettled near Manguinhos in the new, federal social housing complex, *Minha Casa Minha Vida* (My House My Life or MCMV) [151]. Of the 22,000 families who have been relocated in the pre-Olympic period under Eduardo Paes [152], 74% now reside in federal MCMV housing [153]. 2.3 million MCMV housing units have already been built to service low-income and informal sector families. Another 1.6 million units are slated for construction. Using public funds, private contractors build and sell these condominiums for profit. The policy is dependent on the continual need for large volumes of investment.

These apartments are so small (37 m²) that a family with two or three children requires that one family member sleep outside. The MCMV housing complexes that have been built throughout the city for relocated residents, have failed so remarkably that whole complexes have been either abandoned within three years of being built [154], or have devolved to the extent that civil and military police carry out armed operations in attempts to dismantle militia groups operating in the condominiums. According to data from the ministries of Justice and of Cities, of 108 complaints received between April 2014 and January 2015, 70% have

involved assault, murder, or the presence of drug traffickers in MCMV condominiums [155].

The 2015 budget saw a 28% cut in funding to the MCMV program, a reduction which may further jeopardize already substandard building quality where existing units are subject to flooding, non-functioning infrastructure, and inadequate services and maintenance. These housing policies have been found to create trauma and depression for family members, who suffer from the loss of jobs and small business opportunities, increased commute times (up to six hours a day), and higher costs of living [156]. This scenario exacerbates social exclusion and what is referred to as ‘root shock’ [157], the traumatic stress associated with the loss of one’s emotional ecosystem as a result of development-induced displacement.

According to law, financial compensation must be offered to homeowners who are forcibly displaced. The compensation must legally equal market value for an equivalent property within a one kilometer radius. In Manguinhos, market value is currently R\$ 100,000–124,000 (US\$ 32,000–39,000). Though the State is lawfully bound to compensate at full market price, the actual compensation being offered residents is just R\$ 6,000–6,500 (US\$ 1,900–2,100) [122]. Alternatively, residents who choose to relocate into the complexes are eligible for an assisted home-owner purchase option whereby grants of between R\$ 17,000–30,000 (US\$ 5,480–10,000) are obtainable to help with the down-payment in units that Emop is selling at the high end of the market. Residents now pay six times the price they had previously been paying to remain in the neighborhood and live in these new condominiums [158].

Eight lawsuits have been filed against Emop over demolitions and new PAC housing complexes in Manguinhos. Residents at the new *Embratel II Popular Housing Project*, a mid-rise set of 480 housing units, endure a putrid smell from the adjacent oil refinery and a heavy buildup of soot that accumulates in their homes. The 568 DSUP apartments are also beleaguered by sanitation deficiencies that are exasperated by a lack of maintenance. Chronically inadequate trash removal has led to vermin infestations. Sewerage leaks of unsanitary water create high dengue risks, while makeshift connections to pumps leave residents without access to water for weeks at a time [159]. Emop and CEDAE blame the residents for not using the facilities properly [158].

Even though the community has been allocated investment funding worth millions of dollars through PAC, the programs have failed to effectively address one of the community’s most urgent needs, that of the dumping of raw sewerage which flows directly into the Faria-Timbó River and is carried into Guanabara Bay—Rio’s venue for the Olympic sailing events—which accepts about 70% of the city’s raw sewerage overall [160]. The launch of PAC-Manguinhos was accompanied by a presidential pledge to bring basic sanitation to the favela. However, the promise remains unfulfilled, along with numerous other unrealized infrastructure improvements [161].

In June 2012, the presidents of Caixa Econômica and CEDAE stood alongside Governor Cabral to publically announce the R\$ 176 million financing of the installation of the Faria-Timbó sewage collection tube [162]. The promise was not fulfilled and the money disappeared. The pledge was repeated in October 2012, and was accompanied by a R\$ 250 million (US\$ 80.3 million) budget, with construction to start by December that year [163]. The project, again, never materialized. In June 2013, during another round of infrastructure funding announcements, the project was scaled back to “reducing the waste that comes from the Faria-Timbó River into Guanabara Bay” [162]. Yet even without the sewerage tube, little progress has been made (Figure 7).

Severe flash floods that overflow these open sewers have historically isolated Manguinhos communities for weeks at a time [164]. The floods expose residents to a range of public health risks, including the transmission of leptospirosis, a blood disease transmitted through raw sewerage; increased incidents of dengue fever, which is 470% more prevalent in Manguinhos than in affluent neighborhoods [165]; and soil contamination, which has been found to have high concentrations of bioaccumulating carcinogenic pollutants (including lead and cadmium) in ranges above the tolerable parameters for residential development [166].

The piles of ruins, debris, and garbage that are left in the wake of forced evictions only further exasperate these already chronic public health hazards [122]. The tactic of leaving demolished housing ruins visible creates a very deliberate threat of more forced removals to come. The strategy is symbolic of a pattern of eviction [167] whereby residents are confronted by Special Forces and ordered to leave their homes with little to no warning [134]. Troops are usually accompanied or followed by demolition teams that move in, often unannounced, and cut power before bulldozing homes or knocking holes through the walls to make them uninhabitable. Often the process occurs without official documentation and without alerting adjacent residents [122]. One demonstration protesting the eviction of an occupied building in Manguinhos became so intense that it resulted in the UPP headquarters being set on fire and the unit’s police commander being shot in the leg [168].

Residents’ relationships with the police is troubled. The community is dissatisfied with the amount of money being directed toward funding police rather than toward reducing hunger [169]. One of the most visible ‘security’ expenditures around Manguinhos is the ‘City of Police’, a complex of fourteen specialized police stations housing 3,000 civil police. Built in 2013 at a cost of R\$ 170 million (US\$ 56.5 million), the Special Forces training area includes a “shooting house”—a fake favela designed with shacks, alleys and concrete slabs—where police train with live rounds [170]. The results speak for themselves.

In March 2013, just two months after the UPP entered Manguinhos, police tasered 17 year-old Mateus Oliveira Casé to death [171]. Casé’s death provoked community protests which resulted in children, including a four-month old baby, being pepper sprayed by police [172]. In October 2013, 18 year-old Paulo Menezes was beaten and suffocated to death while in UPP custody [173]. In December 2013, an 81 year-old man was shot in the head and killed during a community protest [174]. He had been asking police to wait for the arrival of the mothers of three teenagers who the UPP were arresting for smoking marijuana. On 14 May 2014, 19 year-old Johnathan de Oliveira Lima was shot and killed by the UPP [175]. In July, as a World Cup match was being played close by at Maracanã stadium, 25 year-old Afonso Linhares was fatally shot by police as he was refereeing a football match [176]. In September 2015, a thirteen year-old student by the name of Cristian Andrade was killed when a shootout erupted between Core Special Ops forces, UPP police, members of the homicide squad, and drug traffickers in a retaliatory operation for a police officer being shot in a nearby favela. Andrade had been running to aid a woman he saw fall to the ground when he was shot [177].

Clearly, Manguinhos is the starkest example of violence, social exclusion and poverty outlined in these three case reports, and has seen the most interventions of the three districts examined. Residents have been allowed little voice in the redevelopment of their neighborhood, and tensions between police and residents remain critically strained. However, there have been some improvements brought to the area through pacification, most notably in ending the high visibility of the armed drug trafficking trade on the street and the effect this has on young children. There has also been a decrease in the likelihood of death or injury by stray bullets, even though youth, in particular, remain at risk of violence through police actions.

Social assets such as the garden bring great pride to the community, especially to those who work in the garden, or those whose homes overlook the kilometer-long space. Children can now exit their homes without fear, and are able to see clean, productive space, rather than a dangerous and vermin-infested *crackolândia* built on top of a garbage heap. Children often comment on how much better their neighborhood smells because of the garden. The library also provided a safe and clean gathering place for them to play games and connect on social media networks using computers that were otherwise unavailable to them. Therefore, despite some constructive advances made in regard to social infrastructure, overall, the beneficial activities that have surrounded pacification are at best in jeopardy, and at worst already repeating the familiar pattern of State abandonment, discontinuance, and violent exploitation that residents are so used to.



Figure 6. Manguinhos train station under the elevated tracks with river channel/open sewer, 2015.



Figure 7. Stalled sewerage project and water of the Faria-Timbó River, 2015.



Figure 8. Children's chalk drawings, Manguinhos, 2014.

16. Summary of Case Reports

These case reports show that the UPP, though chronically flawed in many ways, does have some merit, particularly in smaller favelas where conflict is low and policing is delivered in conjunction with social services, provided they can be continued.

16.1. Impact on Public Security

One of the most positive aspects brought to favelas by the UPP is the interruption to drug trafficking brought about by a reduction in the visibility of *bocas* and a decrease in 'open carry' drug trafficking culture, though there still remains substantial pressure on teenage boys to enter into gang culture (Figure 8). De-normalizing the propensity for the open carry of firearms by civilians is important in making Rio a safer place to live, and the UPPs have helped begin this process by giving a generation of youth the opportunity to grow up in environments in which gang violence is not the dominant feature of social control.

The most obvious positive change brought by the UPPs was the reduction in lethal violence inside pacified favelas between 2008 and 2011. During this time, the presence of the UPP is estimated to have saved 60 lives per year per 100,000 inhabitants, and overall lethal violence, including extra-judicial police killings (known as resistance killings) were also reduced [91].

However, the numbers of resistance killings at the hands of police since 2012 have again been on the rise. Youth homicide rates in Rio de Janeiro reached 56.5 homicides per 100,000 in 2012 [178]. Though this was not only attributable to the UPPs, they were a dominant contributor to this growing trend. More recent figures show resistance killings by police between January and August 2015 (459 cases) [179] exceed the numbers for all of 2013 (416), and are equal to 80% of total cases reported for the year 2014 (563 cases) [180].

Residents cite a general decrease in armed conflict be-

tween rival gangs and between gangs and police. However, the incidences and threats of armed violence perpetrated by the UPP produce ongoing psychological stress within the community, particularly in youth [181]. Residents continue to be restricted in their mobility and are searched, detained, and arrested at will by police both inside the favelas and at UPP checkpoints that control the entry and exit points to them [182].

Though open warfare has decreased overall, armed conflicts between police and gang members, and between rival gang members now vying for domination of the same internal territory has created an unpredictability to gunfire exchanges that continue to result in civilian deaths. The arbitrariness of violence in combination with police corruption has exasperated the problems associated with the disruption of drug trafficking. As well, the dismantling of the drug trafficking economy itself has been deliberately avoided as a goal of the UPP campaign, therefore the culture of drug trafficking remains endemic and unabated. In addition, drug trafficking and possession of marijuana, crack, and cocaine within the armed forces rose 337% between the years 2002 and 2014 [183]. Complaints about abuse and corrupt practices in the UPP police are increasing [101]. In 2012, more than 300 military police were expelled from the institution for corruption or involvement with militias, including murder and extortion crimes [184].

Rio's persistent failures that plague its revolving 'community policing' policies in its 'war against crime' [185], are largely motivated by populist electoral politics. Time and time again, these policies have been discontinued due to regime changes and budget cuts [186], leaving residents to cope, again, with living under gang rule [20]. This, coupled with the rising tide of police killings [187], continues to reinforce negative perceptions of Rio's police interventions. Police commit more than one in every six of Rio de Janeiro's homicides. Four out of five of them are perpetrated on young, poor Afro-Brazilians. Deaths caused by the police of Rio de Janeiro grew 18% in 2015, with police killing 517 people just between the months of January and September [188]. Police often alter evidence to conceal the facts, another reason that leaves the general public, and favela residents in particular, mistrustful of them [189].

Fears also persist in residents that being seen interacting with police will mark them as informants, which in turn will bring retribution from traffickers [190]. Alternatively, residents fear that they will be tortured if detained by police [191]. Many see police as just another armed gang [6]. Many also complain of the rise in crime since the UPPs took control, especially in relation to domestic violence, theft, and rape (all banned under trafficking law) [192].

16.2. The Impacts of Urbanization

Many residents want to be involved in having a say about how their communities are being redeveloped [191], and feel that funding would be better utilized if redirected toward providing critical infrastructure and social services rather

than being channeled toward militarization [193]. Most are generally dissatisfied with the interventions that come with pacification because they are locked out of the decision-making processes and daily management of their communities. Public demonstrations, as well as community attempts to legally organize or unionize are swiftly and harshly quashed by the city.

Most are frustrated that the government has not delivered the services, employment opportunities, and infrastructure promised under pacification. The social infrastructure that has been delivered—the schools, daycares, health clinics, libraries and gardens are highly valued by residents, but are continually at risk of being shut down.

According to the IPP, R\$ 1.8 billion (US\$ 0.7 million) was invested in pacified favelas between 2009 and 2014 [195]. 60 new education units [196] have been built to benefit 8,700 students [197]. However, students in public schools only receive four hours of schooling a day due to a critical overcrowding of the system, many students sit in classrooms with 50 other children at a time, and a lack of daycare facilities, though increased under the UPP, still leaves thousands on waiting lists and without placement [198]. In terms of health, 24 hour emergency clinics are built close to the entrance of pacified favelas. The IPP claims the Family Health Program now covers 73% of pacified areas and reaches 100% of residents in twelve pacified territories [196]. However, in Manguinhos, the homeless sleeping outside the 24 hour UPA health clinic shows just how deficient social services are overall.

The most tragic loss of community service has been the loss of funding to the library, which has been a critical asset to favela youth. Though millions went to the architects and construction firms to design and build the facility, only two years of funding was allocated by the state for project management and staffing. The library was first forced to reduce its operating hours in April 2015, and by November, employees were put on notice as almost half the annual funding had been rescinded. It is expected to close permanently, along with other favela libraries, in the very near future.

Regularization has brought a sharp, and often unaffordable increase in the cost of utilities, in electricity in particular. Light—Rio's privatized electric company—has become one of the largest beneficiaries of pacification. Prior to the program, Light claimed it lost at least US\$ 200 million a year from pirated electricity connections in the favelas. In 2010 alone, the company invested R\$ 38 million to rewire communities and install meters in UPP-held areas [6]. Thanks to regularization, the company has formalized almost all of its connections in pacified areas.

The expansion of regularization into pacified territory has also brought formalized cable, satellite television, and Internet connections to the favelas, as well as a slew of other corporate enterprises, accompanied by aggressive marketing campaigns. As reported by Bloomberg in 2012, Rio's favelas have an untapped economy potentially worth R\$ 13 billion [199]. According to a representative of FIRJAN,

“the reclaiming of these [favela] territories formerly hostile to formal businesses is opening ever more markets for large chains”. FIRJAN also claims opportunities are being brought to small entrepreneurs, though many small business holders feel the large chains threaten their business [200].

Despite this economic movement, there has been very little effort invested in providing adequate critical infrastructure. Though the government has promised to invest in social infrastructure, in the opinions of residents, communities overall remain largely unchanged in this regard [201]. Pacified communities still suffer from a lack of adequate space for children to play and are besought by environmental hazards. The vast majority of PAC infrastructure funding has been paid out in the design phase, and much of the infrastructure built by private contractors has been either abandoned half-finished or executed in a substandard way, for example, in the city's massive public housing project failures [202].

Rio's various forced eviction and relocation strategies clearly reveals how the UPPs are essential to the process of claiming devalued space at little cost, especially in regards to the accumulation of real estate and the subsequent raising of speculative land values both in the favelas and in the formal neighborhoods that surround them [203]. The 3,000 or so families that have been allowed to remain in their “at risk” homes [204] pale in comparison to the 19,000+ families (70,000+ people) that have been removed to make way for roads, sports and event-related venues, the renovation of the port area, and other urbanization projects that service the World Cup and Olympics [205].

A significant number of families continue to fight removals, while others are being priced out of their homes, or will be driven out in the near future, given the rapid urbanization activities that are propelling gentrification [30]. Rents have now overtaken sales in favelas, and rents for homes and lajes (concrete slabs that can be built on vertically) in pacified favelas have been rising faster than rents for the city as a whole. Sales of regularized real estate in favelas now fetch ten times as much as those that are informally owned. Urbanization processes must be slowed down, and some regulation introduced to the real estate market, if gentrification is to be decelerated. Even though real estate prices in pacified favelas have sky-rocketed, it is the real estate immediately adjacent to the favelas that are affected most strongly, particularly real estate that has views facing away from the favela, as the Tijuca case study illustrates.

One of the biggest obstacles to creating stability in the favelas is a lack of employment creation that would allow residents to earn a legitimate wage. Without offering alternative ways to earn a living, many will not turn away from the illicit sources of income obtainable through selling drugs. Income generation would also help absorb the rising cost of living brought about by pacification. Increased and better vocational training opportunities would enable adolescents in particular, and residents in general, to attain a higher

level of social mobility.

The 2012 World Bank impact study concluded that the sustainable integration of favelas would require i) employment creation to allow residents to afford rising living costs and to replace former illicit sources of income; ii) a reduction in violence on the part of the UPP; iii) confidence in all sectors that the UPP will remain after the Olympics; and iv) prioritization of social programs [1]. As this report shows, on none of these fronts has the government adequately delivered. In addition, though sustainable development is regarded as one of the government's foundations of pacification, there has been no institutional reform—one of the critical requirements to its success [206].

Having armed drug trafficking gangs controlling inner-city neighborhoods is clearly an untenable situation. That the state is finally stepping in to reclaim gang-dominated favelas, if only in a limited way, is necessary, at least in theory. It is a step that should have been taken long ago. But the current process is defective because instead of being a security strategy for the entire city, the UPP is driven to fulfill the needs of mega-events, construction conglomerates, real estate interests, and those who see favelas as potential markets. Urbanization decisions are made without participation, transparency, or accountability, down to the day-to-day interactions in communities. As long as the state continues its interventions through an exclusionary culture that legitimizes violence and forced displacement, life in Rio will, for the most part, continue as it always has—to the benefit of a few at the expense of the many.

17. Conclusion & Discussion

The UPP program may have both merits and its flaws in regards to tackling the problems of public security, and in providing both social and hard infrastructure services. However, the pacification of select favelas, rather than being viewed as a public security policy, must be understood as a policy designed specifically for the purposes of increasing capital accumulation at various scales for specific interests—interests that achieve their goals through shaping the city as a mega-events venue.

The general framework outlined in this paper and detailed in the case reports reveal various combinations of rights violations in regard to both the right to the city (especially property rights and transportation), and the democratic rights of citizens (access to information, civic participation, freedom of mobility, and public security). Furthermore, this article has aimed to show the connection between Rio's urbanization policies and the violence of pacification—what David Harvey refers to “accumulation by dispossession” [5]—how the State engineers the military takeovers of territories in order to control assets by force with a view to increasing avenues for the growth of private capital.

Favelas are under-leveraged territories especially vulnerable to this sort of exploitation. Strategies of ‘exceptionality urbanism’, enforced under a pretext of public security, enable existing legal regulations to be bypassed in order to

seize devalued assets, recolonize them, and raise their value. The concept of accumulation by dispossession is a valuable framework for understanding these processes.

Major real estate developers, engineering and construction firms, and corporate brands need favelas to be pacified in order for the valorization of commodified assets to occur. Real estate developers and speculators, and the city's middle and elite classes desire pacification in order to grow their capital. And utilities and service providers and merchants require the pacification of favelas in order to expand markets for their commodities.

The results are the wholesale sell off of public assets, the exclusive commercial right to the use of public spaces, and access to public infrastructure at little to no cost. This can be seen as an extension of Brazil's tradition of colonialism, where land, according to urbanist Edesio Fernandes, is “conceived of almost exclusively as a commodity, the economic content of which is determined by the individual interests of owners” [207].

The mobilizing of huge amounts of state capital and political will to transform Rio into a mega-events host city strengthens an already aggressive urbanization agenda. All this capital accumulation involves a degree of dispossession—at the very least the dispossession of public assets and political process. Favela communities, although they may be somewhat liberated from the influence of drug gangs, are also dispossessed of their self-determination in relation to community affairs under the UPP. On a very physical level, thousands are being evicted from their homes or forced out through gentrification.

Areas in proximity to the city's mega-event venues, airports, and transportation lines, previously abandoned by the State, and now considered enormously valuable as the object of real estate speculation, are appropriated by force in disregard of the right to land guaranteed protection under law [208].

Reshaping connections between neoliberal governance, civil society and local relations, to enhance the right to the city for all, will require reassigning key roles in decision-making apparatuses to recognize the importance of inclusive citizenship and the benefits of social equality. Introducing mechanisms whereby citizens begin to have a voice in how their communities are shaped and managed is critical to creating wider public security and sustainable socioeconomic development.

Favela residents are critically positioned to advise the city on their needs. As a consequence and necessity of informality, favelas are shaped by ingenuity. Residents' capacity to adapt to new and challenging contexts distinguishes them as exceptionally able to organically plan, design, and evolve within complex and heterogeneous mixed-use contexts. The qualities displayed in the resilience and flexibility of these communities' abilities to create alternative systems for real estate title exchange, loans and financing, public service infrastructure delivery, urban planning, and housing construction, realized with few material resources, offer an ingenious platform from which to develop vibrant,

community-centered approaches to both policing and urbanization. Even though many internal associational structures have been compromised under gang control, there are still opportunities for building inclusive municipal models in which favelas, and their residents, can better integrate into the broader fabric of the city through collaborative city-building processes that mobilize informal sector residents without disenfranchising them. In other words, pacification is a political choice, and the way pacification is implemented also consists of sets of political choices that perceives of, and deals with informality in a particular way.

There are four dominant, and somewhat overlapping perspectives on informality. The Dualist school of thought subscribes to the notion that informal activities have few connections to the formal economy, and that the sector operates as a separate, less-advantaged, or dual segment of the economy. Dualists believe governments need create more jobs, credit, business development services, basic infrastructure and social services for the sector. Structuralists see the informal and formal economies as intrinsically linked, with informal wage earners subordinated by the interests of capitalist development. They argue that governments should address the unequal relationship between big business and subordinated producers and workers by regulating both commercial and employment relationships. Legalists believe in a formal regulatory environment but acknowledge that formal commercial interests collude with government to bureaucratize or legislate to their advantage, and argue that governments need to simplify bureaucratic procedures in order to incentivize informal enterprises to regularize their businesses, property and assets. Voluntarists charge that informal enterprises have an unfair advantage because of their avoidance of formal regulations, taxes, and other costs of production and services. They argue that informal enterprises should be brought into the formal regulatory framework in order to increase the tax base and profit margins of the public and private sectors. The informal sector can also be seen as illegal, because it is involved in producing activities that are forbidden, unauthorized, or operate in non-compliance with regularization laws [209]. Whatever the perspective, at the core of all these theories lies an opposition between the informal and formal.

Within this oppositional dichotomy lies the assumption that the informal sector is unorganized. On this assumption, it is often discredited for its deficiencies, whereas the formal sector is associated with structure, and therefore, organizational success. This is an important aspect of the formal versus informal debate, especially in regard to policy decisions that lead to formal interventions—often with disastrous results.

In recent years, theorizing about the formal-informality dichotomy has begun to move beyond this conceptualization to discuss the specific objectives of policy intervention outside of this narrow development discourse. There is much evidence to suggest that informally organized communities can be highly functioning and more effective than inefficient or corrupt government structures, and in the case of Rio, the

government's revolving-door intervention policies [210].

Each circumstance, however, is different. Each region, or even favela, presents diverse and variable conditions that make generalizing about informality difficult. Each favela of different size, topography, geography, whether under gang control or free of it, presents a very unique set of complex circumstances. Therefore, Rio's informal sector defined in terms of a lack of social and legal protections may not be the only, or even the foremost aspect to examine with respect to fostering inclusive stability. For example, some people may choose to enter or remain in the high end of informal employment voluntarily because it pays more than formal employment, whereas those that work informally because of limited opportunities have very different degrees of choice within the informal economy. On the other hand, informal employment (and informality in general) that is the outcome of structural constraints that limit choice, is a clear barrier to inclusivity [211].

Social protection policies that are designed to reduce risks among Rio's vulnerable sector should also focus on designing appropriate forms of social protection based on actual sources of risk and need. Evaluating how issues concerning favelas should be integrated into State development policy requires determining to what extent access to social and legal protections represents freedoms or constraints in the ability of individuals to participate in, or benefit from, municipal intervention activities. Informality or regularization may exasperate other social or economic constraints, rather than representing distinct, separate constraints in themselves. For example, a lack of access to micro-finance represents a constraint for many small-scale enterprises, yet the UPP curtails access even further through excluding the informal sector from being eligible to receive this financial service. In Brazil, micro-credit's largest failure is that it is unable to reach those that need it most because of lending policies [212]. The solution involves providing informal enterprises with access to credit, rather than excluding them from it because they are informal, *per se*.

Part of the solution to integrating favelas into the formal city of Rio may involve creating new institutions, relationships, practices, and access to opportunities that, through their existence, make informality more stable, rather than focusing on the goal of eradicating informality in general. In addition, inclusivity requires not only expanding the number of choices available to individuals, but also the quality of those choices [211].

Whether or not this latest round of militarized occupation continues, at the very least, creating and maintaining political spaces in democratic discourse for Rio's lowest-income constituencies requires consistently representing their identities, interests and concerns. In recent years, the rise of third sector social movements advocating justice, inclusion and peace as priorities for the urban poor have intensified reform pressure against corruption and brought attention to flawed government priorities and demands for sustainable services and policies. Dedicated activism and a strong independent mediascape continue to struggle within

a geography of fragmented resistance to protest neoliberal policy in relation to the mega-events—at great personal risk to those involved. Participatory housing initiatives such as those promoted by Brazil's National Movement for Housing Vindication, the Landless Workers' Movement, Global Justice, the Institute for the Defense of Human Rights, and the National Movement for the Fight for Housing, to name a few, seek a holistic solution to urban reform and an end to the housing crisis through coordinating the informal sector and promoting their right to the city. Many local civil sector organizations also engage in justice issues that aim to redress human rights and territorial issues concerning the

architecture of power and economic transition in relation to the changes being brought about in connection to Rio's mega-events.

Overall, however, this is only achievable through institutional reform, and institutional reform can only be achieved through an inclusive, transparent, and accountable political framework. This may be the hardest challenge of all for Rio to overcome. In all likelihood, it is highly improbable that Rio de Janeiro will gather the political will to progress beyond what it already is—a city of exception designed to benefit the bourgeoisie.

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Book Review

A Review of ‘Law’s Impunity: Responsibility and the Modern Private Military Company’

Published: 11 April 2016

Law’s Impunity: Responsibility and the Modern Private Military Company

Hin-Yan Liu

Hart: Portland, OR, USA. 2015

371 pp.; ISBN: 978-1-84946-516-8

The mercenaries and mercenarism are two points of concern for scholars studying the rules of war throughout history. Both in *jus ad bellum* (JAB) and *jus in bellum* (JIB) we can find a framework of international law crafted to impede the participation of individuals motivated to take part in hostilities to get private gain. Nevertheless, paradoxically, the problem is when corporations are supported by domestic law to perform serviced in ground combats abroad. In the latter case, Human Rights Law (HRL), International Humanitarian Law (IHL) and International Criminal Law (ICL) present numerous gaps that make it difficult to incriminate corporations, which perpetuate the impunity among private organizations involved in human rights violations in conflict zones.

In an effort to provide a comprehensive explanation for this impunity which is, unfortunately, very common since 9/11, the book *Law’s Impunity: Responsibility and the Modern Private Military Company* provides an unequalled analysis of legal structures that perpetuate and create impunity for private military corporations (PMC). Hin-Yan Liu—Associate Professor at University of Copenhagen—has a unique perspective, focused in elucidating the systemic ‘defects of ordinary juridical processes which are both more imperceptible, and potentially more pervasive’ (p.1). Hence, the main question for Liu is what ‘role the law itself plays in creating and maintaining the structures of impunity that benefit the PMC’ (p.1).

The work is divided into six chapters and the conclusion, the first chapter being central to the author’s argument. It

explores the fundamental concepts and theoretical framework that justify his radical argument that law itself creates and maintains structures of impunity. In this sense, the impunity for him is not a consequence of law’s malfunction, but the law itself creates impunity. Hence, Chapter 1 explores ‘the contested concept of impunity in order to elucidate its architecture and to express the manifold ways in which law both generate and sustains impunity’ (p.9).

Lin explains that creation of impunity is can be understood through two complementary concepts that are central to the whole discussion: passive and active impunity. On one hand, in the passive dimension ‘the structural properties and characteristics that are integral to the law are shown to generate impunity’ (p.9); it is *de facto* impunity. On the other hand, active impunity ‘is indicated within the suspension of the ordinary juridical process as well in situations where it is exempted altogether’ (p.9); it is *de jure* impunity.

Another two central concepts explored by Lin in Chapter 1 are interpretive denial, concerning the new classification of facts by the law attribute giving them a new meaning, and interpretive assertion, when a possible human rights violator—such as the PMC—‘aspires to form affinities with virtuous actors and actions, contributing to the prospect of impunity by distorting the context within which accountability and responsibility evaluations occur’ (p.10).

In Chapter 2, Lin makes a comprehensive analysis of the PMC phenomenon, detailing its characteristics, (dis)functions and the evolving nature of corporate mercenarism from the past decades’ mercenaries until the serious human rights violations seen in 9/11, Afghanistan and Iraq. Lin’s systematization of the nature of PMC brings not only an explanation of how this kind of corporation works and commits abuses, but also provides substantive historical analysis of examples of PMC criminal behaviour, namely, the case of Abu Ghraib prison torture, released by press in 2004, the disproportionate use of force in Iraq and the sex-trafficking case in Bosnia.

Chapter 3 examines how international law treats the mercenary activity. Lin takes into consideration several legislations like Geneva Conventions, UN Resolutions and the African Union organisation documents, among others. The author makes an encompassing analysis showing the defects of current conventions to obstruct mercenarism, like 'geographic restrictions, low ratification rates and the fact that the crime restrictively defines both the mercenary and the purposes for which the mercenary activity is deployed' (p.182).

Chapters 4 and 5 relate, respectively, the concepts of passive impunity and active impunity with PMC, as well as the idea of interpretive denial and interpretive assertion. The chapters are central to understanding the author's argument that law creates impunity. He shows that the structure of international law—and even in some cases of domestic law—excludes PMC from imputations of wrongdoing. The orthodox legal approach, in that case, does not show its efficacy and appropriateness. Instead, the current law framework opens gaps and subterfuges that make impunity be present in the most of cases.

Finally, Chapter 6 presents the nascent mechanisms to regulate PMC. Lin analyses cases in which States or international organizations are trying to create regulations, like the case of United Kingdom, the Montreux Process and the initiatives concerning self-regulation. The author shows that the 'prospects that the PMC will enjoy impunity for their activities into the future maintain high' (p.336), although forms of collective responsibility through self-regulation could be incentivized.

A minor drawback of the book is that the author overcomplexifies some conceptualizations for the reader, especially in Chapter 1 and 2, when he could be more didactic and clear in his accounts. For example, when he proposes a typology to segregate civilian and military corporations on the principles of distinction in Chapter 2: the use of charts and figures would be useful to understand distinct typolo-

gies and what is different in the author's proposal compared with current literature. The same applies when he explains interpretive denial and interpretive assertion in Chapter 1. By providing a more didactic language and explanation, the reading would therefore become more accessible for the general public. On one hand, such an intricate explanation is comprehensible given the theoretical-conceptual framework proposed for a radical analysis, focusing on law as creator of impunity. On the other hand, the book brings forward a very important and innovative discussion about a key topic for the contemporary international law and international relations that cannot be restricted to academic circles; it is necessary to clarify, for the general public, the findings and concepts used in such important research.

However, this shortcoming does not affect the whole explanation. The scholarship of the author and the quality of data analysis make the book an essential read for researchers concerned, not only with the PMC phenomenon, but mainly with the question of impunity in international law. In addition, Hin-Yan Liu's approach provides original evidence of how important it is to be critical and propositional towards a transformation of international law. Finally, the book also introduces yet another important hallmark concerning research structure: a careful explanation that logically connects concepts and cases studies. Unfortunately, a disconnection between concepts and empirical data, which often results in a fragmented analysis, is common in several international law books. Contrary to this however, Liu makes an astonishing work bridging complex concepts with a contemporary empirical analysis of the important issue of PMC.

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Research Article

A Piece of Land or Peace on the Land: How Much Is a Peasant's Life Worth in Brazil?

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Submitted: 20 August 2015 | In revised form: 19 February 2016 | Accepted: 22 March 2016 |
Published: 18 April 2016

Abstract: Land inequality in Brazil is alarming and several poor individuals living in rural areas do not have enough income to survive decently. The struggle to access land should lead to a paradigm shift with social movements leading this process since democratization. Their strategies vary, but usually focus on complementary activities of mass mobilization that culminate in the occupation of unproductive land that is not fulfilling its social function in order to force expropriation and the creation of new settlements. This study aims to investigate, through empirical evidence, if such strategies are having the desired effect of allowing the poor to access land, without increasing the already high numbers, and potentially aggravating the violent characteristics, of such disputes. During the Cardoso and Lula presidential administrations the relation between the number of new settlements and the number of deaths caused by land disputes increased. However, there is still a long way to go to improve this policy and achieve positive results. Overall, is this struggle for the reduction of inequality in the Brazilian countryside being won? Is the sacrifice paying off? And what is the price regarding the relation between land conflict victims and the creation of new rural settlements?

Keywords: Agrarian conflicts; agrarian reform; Brazil; mobilization; land inequality; social movements

1. Introduction

Brazil has vast dimensions, fertile land and climate conditions that are favorable for agricultural activity. Hence, in 2012, the country ranked third among the world's largest exporters of agricultural products ([1] p. 2). Given these natural attributes, it is hard to conceive that this abundance would lead to violence caused by land disputes, since well-distributed land among the peasant population would contribute to rural inhabitants deriving their livelihoods from the land. The main problem is that the land is extremely unequally distributed: 1% of landowners occupy about 50% of arable lands [2], which is one of the highest rates of land concentration in the world. With the expansion of agribusi-

ness and human and animal food crops being replaced by renewable energy crops, land concentration worldwide is growing, and tends to grow even more, in countries with a Brazilian or Latin American profile [3,4].

Land in Brazil is an abundant natural resource though very unequally distributed and, as such, part of the existing literature discusses the association between abundant natural resources and violent conflicts, especially as a cause for civil wars [5–10] and other episodes of violence.

However, there are not many studies relating natural resources in general, and land in particular, to lower-intensity conflicts that also cause a great number of deaths, as well as forced displacement, arrests, injuries, threats and the like.

In existing studies, the type of political regime is often

included in models as one of the variables that can lead to the insurgency of collective violence; violent conflicts have a greater tendency to happen within *anocratic* [11] (or hybrid/intermediate) political regimes. These regimes are known for being a middle ground between a consolidated democracy and an autocracy, mixing democratic and autocratic elements in which the population does not have freedom and the heterogeneity of groups is not respected. On the extreme, civil and political liberties are violated and protests are strongly suppressed [12–15].

Since democratization in 1985, due to the country's abundance of natural resources, particularly land (the theme this study aims at addressing), and the very little time the country has had to strengthen its institutions, Brazil has gone through agrarian conflicts caused by the historically unequal distribution of land, which in turn produces poverty and misery in the countryside. About 1,500 people have died since the country's democratic opening as a result of the struggle for land; the great majority of deaths occurring among the peasants or their supporters [16].

This study aims to evaluate the cost of human lives that derives from land dispute conflicts in Brazil, analyzing if social movements and non-governmental organizations that mobilize the rural (and urban) population to fight for fairer land distribution, and consequently reduce poverty, achieve the desired effect. That is, if the means applied to acquire a plot of land for the poorer rural population is producing the practical outcome of a more equitable land division.

For this purpose, a new database from DATALUTA will be examined on the different types of peasant mobilization, land appropriations and settlements implemented in Brazil between 1988 and 2011. 1988 marks the year of the new Federal Constitution. Article 186 of this most recent constitution requires proof that the land fulfills its social function and is not unproductive in order for it not to be destined to expropriation and distribution to very small owners or landless peasants. Data on agrarian violence will also be presented, with the aim of clarifying the number of people that have died in the struggle for land, the mobilization activities that third sector entities implement to keep this struggle alive, and the number of people that have been settled. In short, is this fight being won? Or furthermore: Is this fight paying off in terms of the ratio of *victims of land conflicts to settlements created*?

2. Background of Violence in the Brazilian Countryside

One of the Brazilian military government's goals in 1964 was to develop the country's agriculture. Shortly after the military coup, during the military government's first year, the Land Statute (Estatuto de Terra) was created. This document emerged with the purpose to reduce conflicts over land and to prevent communism from spreading across the country and, amid the Cold War, counted on support from the US, especially after it had 'lost Cuba' to the Soviet sphere of influence. One way to accomplish this was to

facilitate credit and give vast areas of land to large companies that had no expertise in the field, since they were from the automotive industry, financial markets, and other fields unfamiliar to the agricultural sector [17].

People raced to areas where they believed to be vast tracts of unowned land. At the time, the motto was "Land without men for men without land". However, a great part of the area that seemed unoccupied had been donated or financed at very low interest rates to companies who did not cultivate the lands, especially in the Amazon region, in the northern part of the country. Rural workers arrived in search of land and occupied already owned areas. However, the region did not have the necessary infrastructure to transport agricultural products, and the newly arrived workers were vulnerable to several diseases.

Many local elites forged and artificially aged documents by putting them in drawers full of crickets, which made papers appear old, as if the properties had been inherited long ago. They were also aided by registry offices and notaries in the region, who legitimized the fraud. This is known as land grabbing (or in Portuguese - *grilagem de terra*).

A great part of the land disputes originated [18] from the high concentration of owned land occupied by squatters, and from conflict between plantation owners and small-holder farmers, since large tracts of land generally required expansion to meet the agribusiness model, a relatively modern phenomenon.

The democratization process in Brazil began in 1985 with the downfall of the military regime and was consolidated in 1990, with the country's first free and universal presidential elections. Concurrently, non-governmental organizations (NGOs) and the third sector were allowed to represent the different sectors of the population. Consequently, individuals and groups, particularly in the poorer segments that had no representation in parliament or in civil society as a whole, received assistance and were no longer suppressed. *Citizenship* was being built. Such organizations and social movements mobilized peasants in order to pressure government representatives to undertake a land reform that would decentralize land tenure. There was heavy opposition from groups of large landowners who wanted to preserve the *status quo* (the Ruralist Democratic Union, known by its Portuguese acronym as UDN). Such groups were well organized and exerted significant influence on congress. In 1987, the president of the UDN admitted his organization had bought 4,000 guns and had 70,000 firearms at the group's disposal ([19] p. 30) for protection against occupation of the members' private property.

The agrarian issue is embroiled in violence because, on the one hand, peasants want to take over land that is supposedly owned by third parties or the State and, on the other, landowners (or presumed owners) try to protect their territory from occupants by hiring gunmen or the police. Meanwhile, the State withdraws itself by not defining a clear policy to appropriate land and redistributes it to the poor living in rural areas. This is of utter importance considering that three out of every four of the world's poor live in rural

areas ([20] p. 36). Agrarian reform should be no less than a social policy to combat poverty where it is mostly concentrated: in rural areas. By alleviating rural poverty, the country would strengthen itself. One of the main problems in Brazil is that the State lacks the capability to carry out a substantial agrarian reform. Moreover, pro-market considerations disregard productive land as land to be included in the reform ([21] p. 221). The agribusiness sector is very important for balancing accounts given that commodity exports are a major source of foreign currency for the country. As observed, even workers' political representatives when in power, tend to support agribusiness at the expense of land reform, and Brazil is no exception.

Land occupation and its retaliation is a unique process that must be understood as a practice based on political context and performed as collective action ([22] p. 169) from both sides: those who occupy the land and those who defend it from occupation. The difference between these two forces is that those who occupy do not do it to practice violence against third parties, in the direct sense of physically victimizing people. However, retaliation of these occupations is frequently performed with the intent to cause physical harm to the activists.

There is also a legal problem. The occupation of unproductive land, as mentioned above, can be legally justified through the Constitution, and the defense of public property is in accordance with the Brazilian Civil Code. While the National Institute of Colonization and Agrarian Reform (INCRA) defends the peasants, justice courts often favor the owners. None of these institutions prevail over each other, thus, land dispute conflicts continue ([23] p. 137). The current model incentivizes both sides of the conflict to use violence, taking into consideration that one side has weapons at its disposal, while the other is formed by an unarmed and poor population willing to revert the long standing land inequality scenario that persists among these divergent actors.

Land occupation is the strategy most commonly used by social movements and rural workers' unions aiming greater opportunities for access to land. Landless workers and smallholder farmers with small areas of land for subsistence pressure the government through local NGOs to solve land conflicts and implement rural settlements ([24] p. 73).

There is a sense of urgency for the State to intervene when a peasant group, affiliated to a rural social movement or union, occupies (or threatens to occupy) an area that is supposedly unproductive and belongs to another owner, so that violence does not get out of control. In this case, the area is evaluated to ensure it is unproductive (usually the peasant leadership has already done this to map the possible targets) and begin the expropriation process (usually through compensation), which can take months or even years, depending on procedural progress. During this time, the territory is referred to as a land occupation. Upon approval and completion of the process, the land becomes a settlement. Nonetheless, there are many problems entailed, such as lack of infrastructure, lack of housing, reduced fi-

nancial loans, shortage of technical assistance, distance from towns, and susceptibility to diseases. The new settled owners receive their titles and formally own their plots, and can even sell them if they so desire. However, in such cases, they won't be allowed to participate in a future land reform and this can generate conflicts within the social movements, since the fight for land is not aimed at obtaining financial gains, but survival and a life with dignity.

"Landowners and local authorities in the Brazilian countryside frequently respond to occupations with violent repression. Their action reflects the hybrid character of the Brazilian state, modern and rational in cities and at the federal level but, in many rural areas, still clientelistic and marked by non-legitimate violence. . . [On the other hand], the action of the land occupiers, however, is legitimated by the claim of civil disobedience while the efforts to repress them cannot lay claim to legitimacy on that basis" ([22] p. 156).

This duality that represents a contradiction between the city and rural areas, makes economic and political power decisive in the countryside, favoring large landholders and the agribusiness elite by employing State authorities and the use of violence, to the detriment of the most vulnerable rural worker and landless people.

However, as a counterpoint, the police crackdown on the protests had the opposite effect than was intended, and ultimately increased the protests, forcing the State to lend a hand to farmers by expanding the agrarian reform. State violence serves the purposes of those interested in getting a piece of land through agrarian reform. This occurred in Brazil. The intensification of the protests in 1995 and 1996, followed by repression, created a situation in which it was possible for the population to put in practice collective action mechanisms and to include the issue of police violence and land reform in the agenda, pressing the Brazilian government to expedite and expand the scope of land distribution [25]. The State's violence probably favored the creation of more rural settlements. The question is to what extent does the cost in lives encourage the State to take action to implement the necessary policies?

3. Empirical Study

Due to all the issues involved in land acquisition through redistribution and agrarian reform, those waiting to receive a portion of land for subsistence end up spending a large amount of time intensely mobilized by the organizational structure. The aim is to pressure the various levels of government through different means, demonstrating the precarious situation and violence they are subjected to.

The democratization process allowed for the creation of a large number of organizations and civil society movements, whose aim is to mobilize landless workers in order to occupy unproductive land across Brazil. According to data from DATALUTA [26,27], to be explained ahead, there were 108 different associations active between 2000–2011

mobilizing people to, among other activities, occupy land (see Appendix).

The vast majority of these movements are local (more than 70 per cent were found acting within just one out of the 27 different Brazilian states) and do not act nationally. However, there are a few organizations that are engaged in activities throughout the country and, at times, even acting internationally, aiding landless peasants from other countries in their fight for a plot of land [28]. They often form partnerships in order to maximize their efforts to occupy land. Only a few social movements act nationwide, therefore, this paper will deal mainly with organized movements that are spread throughout Brazil.

4. MST and CONTAG, Two Nationwide Movements

Because of our scope, it is mandatory to detail in brief how these main social movements were created, how they operate according to their own rules and the differences between them.

The Rural Landless Workers Movement, known as MST (from the Portuguese acronym for *Movimento dos Trabalhadores Rurais Sem Terra*), was formed after the Catholic Church installed the Pastoral Land Commission, CPT (from the Portuguese acronym for *Comissão Pastoral da Terra*), during the military regime in 1975, to counteract a specific modernization policy which consisted in granting large tracts of land to the various companies from different economic sectors so that they could transform what was understood as a development lag into a very effective agricultural sector. After acting in conjunction with CPT for some time, the Movement gained autonomy and started to operate independently, although there were some areas in which they held similar interests and actions.

The modernization of agriculture, as proposed by the government, ignored peasants and gave capitalist companies the main role in modernizing and developing Brazil's countryside. CPT's main task was to organize peasants' movements that emerged during the military regime ([29] p. 10). The State's oppression was directed against those social movements such as the MST, which was first organized in 1978 after occupying a farm in the state of Rio Grande do Sul, with 110 families [30]. In time the MST expanded its objectives and included the restoration of the democratic rule in the country and the pursuit for representation in Congress - certainly an innovative path for dispossessed people in Brazil, who had never been politically represented. Within a decade, the movement had turned very popular among peasants and gained growing support from urban sectors as well, particularly in universities and other NGOs.

Land occupations were adopted as the movement's main form of action, but additional strategies for striving for a piece of land were also included in its operation. According to Fernandes [29], MST's formation consisted of three different periods: Creation (1978–1985), mainly in the South and South-East of Brazil, occupying land from latifundia and large corporations; Consolidation (1985–1990)

spreading across the country and building its organizational structure; and Institutionalization (1990s) when the movement intensified the peasantry's resistance actions, dealing with a very repressive State apparatus while occupying land ([29] pp. 11–12).

An additional difference between the members of the MST in relation to other movements of landless workers is their high quality of life, as demonstrated by a national spectrum research conducted by government bodies such as the Ministry of Agrarian Development (MDA) and INCRA. The reason is the MST's organizational structure, in which its affiliates need to get involved and are expected to commit to participatory education that is run according to the Movement's goals. The results of this national survey indicated that MST landless workers are considered to have a higher self-perceived social status in relation to other movements, taking into account social justice, racial democracy and humanitarian values [31]. Despite its ideological education for its rural communities, the MST is also perceived as an organization that prepares and educates children and adults with the basic elements for being full citizens and that demands public services from the authorities. Certainly, these features help the Movement gain more support and to rank it as one of the largest in Latin America.

The National Confederation of Agricultural Workers, CONTAG (*Confederação Nacional dos Trabalhadores na Agricultura*), was created in 1963 and is the official rural workers union [32]. This form of rural unionism defined its actions, which are aimed at defending labor rights in various areas. It is a less ideological movement than the MST.

Nonetheless, during the military period, the regime's opposition, represented by other social movements saw CONTAG skeptically and NGOs criticized the Confederation at that time. The rural department of the Unified Worker's Central, CUT (*Central Única dos Trabalhadores*), criticized CONTAG for being submissive, legalistic, and for not solving the problems of small farmers. Since its origin, CUT's rural department stated its intention to form an alternative union, opposed to CONTAG, closer to the grassroots, less bureaucratic and more combative in defending the interests of farmers ([33] p. 4). Nevertheless, CUT and CONTAG joined forces in 1995, but split up in the late '90s due to disagreements.

A large regional newspaper in Brazil published a report that highlights differences between MST and CONTAG, regarding the organization of an act of protest that occurred in the year 2000 called 'The Cry of the Land' (*Grito da Terra*), as follows:

Unlike the MST, which rents buses with hard fiberglass seats, CONTAG rented mostly luxury and double-decker buses with air conditioning that belong to tour companies. CONTAG rented eight large tents to receive the protesters. A security company was responsible for the organization of space and for watching the belongings of those who slept on site.

The MST, when camping in the capital Brasilia, usually occupies public spaces with no lighting, toilets or sanitary

conditions. As for CONTAG, it bought 24,000 bottles of mineral water at the opening of a protest and two big loads of soft drinks, which were distributed by a truck that followed the protest on the Promenade. The MST usually uses water-tank trucks. The MST offers protesters bread without butter in the morning and a warm lunch with rice, beans and low-quality meat while CONTAG provided a complete breakfast and barbecues with several types of meat and vegetables for lunch and dinner.

Apart from these meals, CONTAG prepared a bag with three ham sandwiches for every protester.

What is observed in both movements' demonstrations is that the MST is opting for bolder actions, such as the invasion of public buildings, while CONTAG has given preference to marches and public events. Both movements, however, have the option for land invasions in common (5 October 2000) [34,35].

Other differences besides those mentioned above, pertain to how the movements understand the role of modernization in agriculture. Even the Brazilian government during the military regime intended to modernize agriculture but with a completely different approach than that aspired by certain social movements such as the MST. While the military regime focused on the large capitalist conglomerates as central actors in this process of modernization, the MST had a more ideological and clear political view in this regard. Its objectives are to combat the commodification of land reform, fight agribusiness and transnational companies because these want to control seeds, production and agricultural trade, besides keeping workers in the field under labor conditions analogous to slavery and other forms of subordination. MST proposes that agriculture be focused on the domestic market, that it respect the environment and encourages the agricultural cooperation and autonomy of workers [36].

Nevertheless, the two largest groups defending peasants (MST and CONTAG) have common goals such as (a) the expropriation of all land holdings belonging to foreign capital and banks; (b) the expropriation of land in which 'modern slavery' is used; (c) both strive for the demarcation of all the lands of indigenous and quilombo communities

[36]; and (d) both have national penetration and their members are scattered around the country, unlike most regional agrarian movements.

5. DATALUTA

DATALUTA is a land-conflicts database containing national information on land occupation, rural settlements, socio-territorial organizations and land structure as of 1988. Categories such as socio-territorial movements, land structure and peasantry demonstrations were recently incorporated. The dataset was created by the Center for Studies, Research and Projects on Agrarian Reform (NERA) of the São Paulo State University (*Universidade Estadual Paulista, UNESP*) and it is part of a larger body, the DATALUTA Network, which seeks to undertake joint efforts by bringing together nine research groups from universities located in several states in Brazil, as follows: UNESP (São Paulo State), *Universidade Federal de Uberlândia* (Minas Gerais State), *Universidade Estadual do Oeste do Paraná* (Paraná State), *Universidade Federal do Rio Grande do Sul* (Rio Grande do Sul State), *Universidade Federal de Mato Grosso* (Mato Grosso State), *Universidade Federal de Sergipe* (Sergipe State), *Universidade Federal do Espírito Santo* (Espírito Santo State), *Universidade Federal da Paraíba* (Paraíba State), and *Universidade Federal do Mato Grosso do Sul* (Mato Grosso do Sul State).

This network helps to obtain more accurate data on the agrarian issue. Thus, DATALUTA became a national and international reference for agrarian conflicts and has enabled research exchanges with other countries around the world [27]. The researchers that contribute to the dataset give consultancy to social movements such as MST and CPT, among others. Nonetheless, it is yet not widely known by scholars abroad at this stage. However, there are few sources of trustful data in this area and they all present deficiencies. DATALUTA is no exception, but it is improving constantly and seems to present more advantages than methodological problems. Figure 1 shows relevant information about Dataluta in its various dimensions, from scale-level data, categories included in this database, and the sources consulted for its creation.

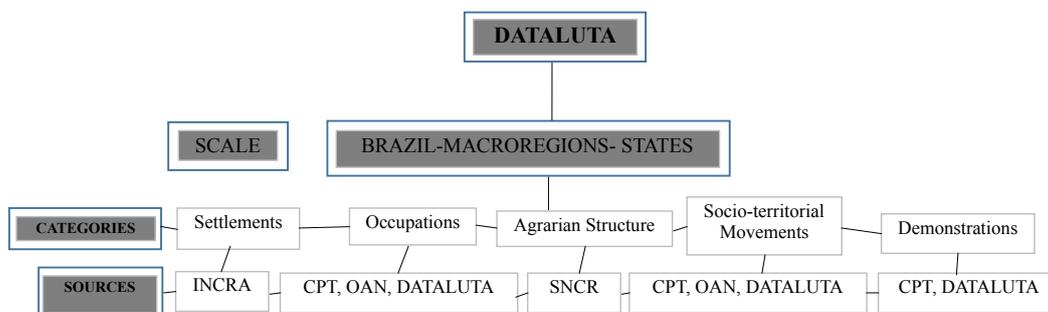


Figure 1. DATALUTA scales and categories. Source: [27], p.10.

Data on land occupation, demonstrations and socio-territorial movements are collected through secondary research in various journals and academic and non-academic institutions in states where the DATALUTA network's research groups are located. When needed, field research is carried out to better understand different realities. Data is gathered from different sources, confronted and systematized through DATALUTA reports.

DATALUTA's methodology consists of systematizing data from primary and secondary sources and organizing it on different scales: municipal, micro-regional, state, macro-regional and national levels. Reports in DATALUTA work with land occupation (since 1988), rural settlements (from 1979), socio-territorial movements (since 2000), land structure (for the years 1998, 2003, 2010, 2011 and 2012) and demonstrations (since 2000). Data regarding land occupation, families and socio-territorial movements are organized from the following sources: CPT, National Agrarian Ombudsman (OAN; 2004–2009) and the data collected from national and regional journals by the network's research groups.

Data from rural settlements are extracted from INCRA and confronted annually with the Land Institute of the State of São Paulo (ITESP) and the National Association of State Land Bodies (Anoter Foundation). As Brazilian universities and institutions are not well known for collecting data, not much could be found on the subject. CPT is an exception that contributes annually with reports [16] regarding land conflicts in Brazil since the 1970s. Besides CPT and DATALUTA, no major or trustful datasets about the issue were released for empirical research; therefore, more efforts for collecting and processing data are needed. DATALUTA is certainly a step in the right direction.

6. Data Analysis

Of all the land occupations that happened between 2000 and 2011 in Brazil, the MST participated in no less than 50.2% and CONTAG in, at least, 10.4%. Thus, 62.9% of all land occupations in the country were primarily organized by these two movements [37], and that is why this paper has dedicated a separate subsection for the two movements mentioned above. Therefore, despite the abundance and proliferation of representative entities that aim to mobilize peasants and supporters on a variety of activities in order to decentralize land tenure and achieve land distribution in the country, the majority of occupations and most landless peasants are under the leadership of few groups. Of

a total of 682,629 families that took part in land occupations between 2000 and 2011, 64% were mobilized by the MST followed by CONTAG, with 8.2%. Table 1 shows 6 different entities, the number of occupations and families involved with them during the analyzed period, as well as the respective percentages.

Although land occupations garner great visibility, there are many other activities organized by these social movements that also draw attention to the issue of lack of access to land faced by a great number of peasants. Among these participatory strategies are: camping in relevant localities; solidarity actions; petitions in favor of the cause; hearings with authorities; road blockages; registration of interested parties; marches; religious celebrations; siege of construction sites; concentration in public spaces; meetings; strikes (including hunger and thirst strikes); access bans; manifestos; task forces; occupation of bank branches; occupation of public and private buildings; leafleting; vehicle retentions; pilgrimages; looting; thematic demonstrations; vigils; among others.

The amount of participants involved reflects the relative level of impact and media coverage these activities receive. Consequently, there is a greater possibility for a favorable public opinion towards land redistribution. Therefore, not only potential beneficiaries, but urban supporters also can (and actually do) join the masses in these events. Many times these activities take place in large urban centers to form public opinion and mobilize supporters other than those directly involved in the struggle for land. Scholars, students and union workers are some of the potential targets to raise support and serve as a force in forming public opinion and pressuring decision makers on issues related to agrarian reform and land redistribution. The media's approach and coverage also plays a relevant role in mass mobilizations.

As shown in Table 2, in the twelve-year period (2000–2011) analyzed, over five million people participated in these mobilization activities as a strategy to pressure decision makers. This number does not include those who were not registered or counted, which would potentially increase the total figure. Also, people can participate in more than one kind of activity. Therefore, the final number should be interpreted not as the total number of different people involved in actions, but the total number of overall participants. The most popular activities that mobilized a substantial number of participants were: pilgrimages; concentration in public spaces; road blockages; thematic demonstrations; marches; camps; and walks.

Table 1. Different manifestations aimed at attaining visibility to the struggle for land, 2000–2011.

	MST	CONTAG	CPT	FETRAF	INDIANS	MLST	Total
Number of occupations (%)	2,673 (52.5)	530 (10.4)	165 (3.2)	137 (2.7)	152 (3.0)	127 (2.5)	3,784 (74.3)
Number of families (%)	438,819 (64.0)	56,015 (8.2)	13,763 (2.0)	17,617 (2.6)	11,995 (1.7)	15,583 (2.3)	553,792 (80.8)

Source: Based on [27].

Table 2. Different manifestations organized to gain visibility for the struggle for land, 2000–2011.

Actions	Events	People	Actions	Events	People
Circling public spaces	2	3,600	Manifestos	29	12,240
Camping	468	265,960	Marches	334	498,487
Solidary Actions	2	37	Task Forces	1	150
Petitions	2	n/d	Occupation of bank branch	224	48,626
Hearings	41	3,894	Occup. of private building	99	48,414
Protests on boats	7	950	Occup. of public building	1472	558,745
Road blockages	1,517	584,985	Occupations of public/private buildings	131	24798
Registration	1	n/d	Leafleting	4	4,500
Walks	233	194,023	Tolls	2	200
Religious Celebrations	47	17,935	Vehicle Retention	4	700
Sieges of construct. sites	35	15,400	Pilgrimages	166	1,112,868
Concent. in public spaces	1,975	932,237	Lootings	33	7,727
Meetings	8	2,060	No information	70	31,213
Strikes	1	n/d	Thematic demonstration	570	604,853
Hunger strikes	9	74	Occupation attempts	7	5,400
Thirst strikes	1	2	Looting attempts	4	170
Interdictions	15	15,804	Tratoração [37]	1	800
Fasting	21	1,053	Vigils	74	21,859
Total				7610	5,018,777

Source: Based on [27].

Of the 7,610 events registered in these twelve years, the MST participated in 3,305 (43%). This movement is exceptional at mobilizing rural workers. Supporters of their cause tend to organize on the national and international levels—the MST provides training to Latin American peasants and exchanges knowledge with different organizations in the field, such as the Bolivian MST and La Via Campesina. The CPT is one of the most important entities that support the struggle for land distribution, mobilizes peasants, and also provides legal and social assistance. The CPT participated in 935 mobilization activities; the Brazilian Movement of People Affected by Dams (MAB) participated in 446 mobilizations; the Rural Workers' Union (STR) took part in 291 activities; the Federation of Agricultural Workers (FETAGRI) participated in 210 activities; and the Confederation of Agricultural Workers (CONTAG), in 109 mobilizations. Contrary to the occupations' figures, CONTAG had a much more restrained participation. It is important to note that several of these actions were jointly organized by more than one of these entities.

Figure 2 presents data on the number of demonstrations and participants in a compact and overlapping manner, showing fluctuations and indicating a trend.

The changes in both the number of demonstrations and the number of family participants are cyclical. On presidential election years (2002, 2006 and 2010) in which a candidate from the Workers Party (PT) had real chances of winning (and in fact, they won all three elections: Lula won in 2002 and 2006, and Dilma Rousseff won in 2010) [38], there was a significant reduction in activities. The exception was 2010, with a slight increase in the number

of demonstrations and participants. This was probably to the benefit of the PT candidate and did not influence negatively the party's support given it has the most affinity to land distribution issues. The year 2010 was the third time a presidential candidate from the PT was running for office with real chances to win, and the results of a tiny agrarian reform and dissatisfaction with that policy could impact demonstrations against the PT government by agrarian reform supporters. However, the actual figures on the number of settlements created during the two terms of President Cardoso do not differ considerably from those created during Lula's two terms. Both, the Brazilian Social Democratic Party, PSDB (*Partido Social-Democrata Brasileiro*) and the Workers' Party, PT (*Partido dos Trabalhadores*) achieved advances for the rural population with progressive public policies. However, they both chose to carry out a conservative land reform greatly benefiting agribusiness instead of reducing inequality in the countryside. The result was more land concentration and less income for the poor rural population [29], expanding areas for sugarcane (for the production of ethanol) and soybeans intended for agribusiness. There was an increase in the number of victims of land conflicts both among peasants and agribusiness industrial farmers [27].

Alongside mobilization activities aimed at communicating demands to Brazilian society and decision makers, land occupations are strategically planned to rouse Government intervention and accelerate the process of agrarian reform. Therefore, the following figure (Figure 3) shows the dispersion of land occupations organized by social, religious and union movements.

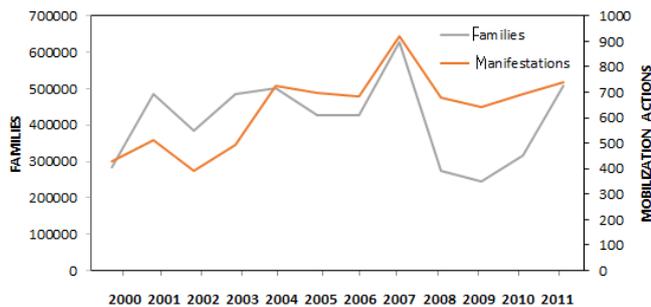


Figure 2. Number of demonstrations and participants, 2000–2011. Source: Based on [27].

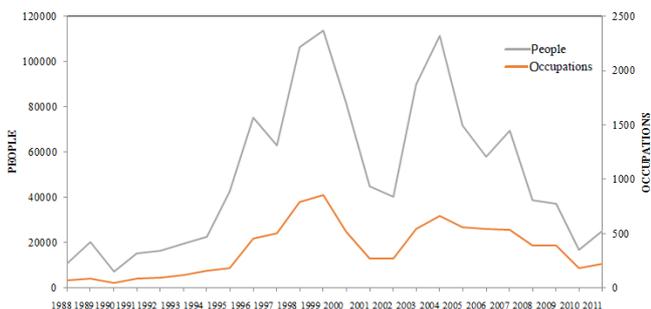


Figure 3. Number of land occupations and people involved, 1988–2011. Source: Based on [27].

Data is available as of the year of the promulgation of the new Brazilian Constitution, in 1988, when the social function of the land became an intrinsic part of mobilizations surrounding the issue of agrarian reform, encouraging groups of landless rural workers to occupy primarily private land provided it was unproductive.

The same fluctuations can be observed both on the number of occupations and the number of people involved in them. Similarly, in election years when a candidate from the Workers Party (PT) had a real chance of winning (2002, 2006 and 2010) the number of occupations and of participants dropped. The opposite occurred in previous election years, 1994 and 1998, when Cardoso was the front-runner candidate and subsequently won. This indicates that there is political coherence in the movements participating in the struggle for agrarian reform, although in absolute numbers, as previously mentioned, the number of settlements achieved does not differ drastically. During the eight years of the Cardoso administration, 584,655 families were settled, compared to 614,093 settled families during Lula's two terms ([39] p. 46). Yet, the available area for these settlements was significantly larger in the PT administrations, demonstrating the party's affinity for agrarian reform. However, in terms of governance, when alliances are not always ideologically coherent, it is more difficult to implement land redistribution policies that benefit poorer peasants.

Among members of Congress, the so-called Rural Caucus (*Bancada Ruralista*) was formed to advocate privileges for large landowners and oppose the agrarian reform. These politicians belong to different political parties and many were

in the governing coalition during Cardoso's, as well as Lula's and Dilma Rousseff's administrations. This suggests a voting ambiguity on issues relating to land distribution and agricultural activity in both houses of the Brazilian Congress. To illustrate this idea, in the 1994 and 1998 elections there were about 150 congressmen forming the Rural Caucus. Its ideological scope ranged from right to center-left, which made land redistribution in the country politically unfeasible ([22] p. 164). This can be considered a great obstacle in achieving fairer land distribution in the country.

Both mobilization activities and land occupations organized by civil society entities encumber participants' involvement in order to receive a plot of land, which, in the end, is nothing more than selective incentives ([40] p. 51) to participate in this risky endeavor.

With the risks involved in collective action of this kind, Figure 4 shows the number of peasants and supporters killed over issues pertaining land dispute. This figure includes participation in mobilization activities organized by social movements. The data confirms that participation in the struggle for land can result in death, as illustrated by data from the CPT.

An interesting fact observed in the data is that, after 1988 (when the democratic regime came into effect in Brazil) the number of killings over land disputes was significantly reduced. The year coincides with the promulgation of the 1988 Constitution, which transformed agrarian issues and facilitated expropriation in the case of unproductive land and non-compliance with the social function as described in the document. During the first three years of the democratic regime (1985–1988), the number of killings over land disputes was huge. The new Constitution may have played an important part in changing this, influenced by additional factors, such as the emergence and strengthening of social movements. That is, from that year on, there were laws that benefited disadvantaged rural groups by favoring land distribution and expropriations by compensating landowners in case the land did not comply with the minimum production standards. Moreover, non-governmental organizations that were legally supported by the Government advocated for the peasants' interests, providing attorneys, land surveyors and other available assistance. Therefore, the peasants were no longer *alone* against large landowners and were increasingly aware of the laws and strategies to legally acquire a plot of land, although they often gave the impression of civil disobedience by occupying land that belonged to others.

Despite the decrease, killings over land dispute continue to happen, even though the number has been stable since the promulgation of the 1988 Constitution. Violence ensues and peasants are being killed and suffering numerous human rights violations as a result of the struggle for land redistribution.

It has been stated that several mobilization activities of the poor rural populations are carried out by organizations that seek agrarian reform. The occupation of unproductive land, which in part [41] is consistent with the law, is one of the strategies that achieve the greatest impact.

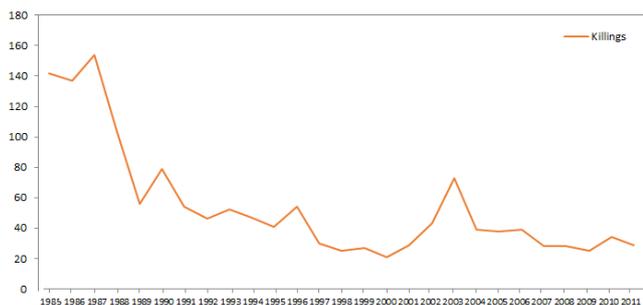


Figure 4. People killed over land disputes, 1985–2011. Source: Based on [16].

In 2003, there was an abrupt increase in the number of people that died as a result of land conflicts. It was in the beginning of Lula’s first term in Office. This hike in the number of deaths caused by land conflicts can be interpreted as a result of the peasants’ and their supporters’ high expectations generated by the workers’ party assuming the Federal Government for the first time. Consequently, there is an explicit increase in land conflicts because the peasants and smallholders understand that the government is on their side and that it can finally implement the agrarian reform more vigorously. Concurrently, the large landowners and agribusiness entrepreneurs are willing to defend their territory and, thus, more deaths result from these clashes.

Given these extreme demonstrations and the risk to human life pertaining to the struggle to access land for peasant subsistence, how are these inputs being translated into outputs? That is, do land occupations and other mobilization activities result in a higher number of settlements? Figure 5 shows the number of implemented settlements since the promulgation of the new Constitution in 1988 to the present day.

The lines representing settlements and settlers follow the same direction as the previous figures, also showing an important relation to election years, starting on the year of the new Constitution.

By placing Figures 2, 3 and 5 side by side and comparatively analyzing them as if they were a temporal combination, that is, as fitting in pre-determined goals, culminating in an agrarian reform and in fairer and less unequal land distribution, they all meet the movements’ purposes of *social justice* for peasants.

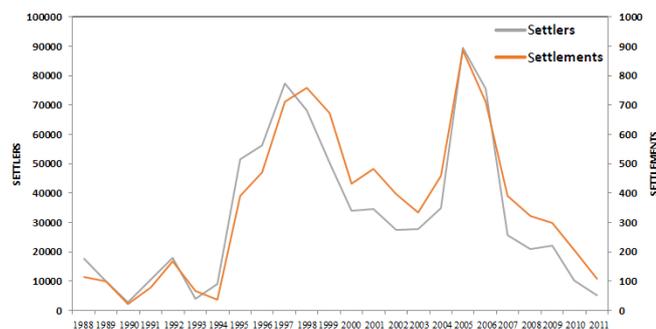


Figure 5. Number of settlements and settlers, 1988–2011. Source: Based on [27].

That is, in election years when the Left had realistic chances of winning the presidential (re)elections, the number of mobilization activities, along with land occupations resulting in settlements, was greatly reduced. On other occasions, the number in each of those categories increases, including the figures on land occupation and settlements in election years when the chances of a Center party candidate winning the Presidency were higher.

Overall, the activities and strategies of the social movements to optimize land distribution in democratic Brazil are coherent and the results are consistent with mobilization activities.

Therefore, what does this progress mean in terms of land redistribution? This cannot be referred to as agrarian reform, because it is forced by land occupation and other activities that pressure authorities. It is not a planned agrarian reform, executed without pressure from the public opinion and avoidance of further bloodshed.

By analyzing Table 3, it is observed that there was a quantitative leap in the two terms of the Cardoso and Lula administrations compared to previous governments with regards to land redistribution in Brazil. In the two terms of President Cardoso’s administration there were 4,310 settlements created, while 3,602 settlements were created during the eight years of Lula’s administration. However, the extension of settlements increased during Lula’s government; while a smaller number of families were settled, the area size per family was much larger. This allows both for subsistence and trade to take place in the establishments [42].

We have to differentiate two terms used in the international literature, which are not applied in the Portuguese and Spanish languages for lack of the expression “Land Reform”, but only Agrarian Reform. Thus, there is confusion in the discussion of the agrarian issue in Latin America. Agrarian reform generally embodies land reform as its most important element. “Agrarian reform includes both redistributing land and assisting new landowners by assuring them inputs and markets, extending credit and imparting certain technology that will help them to become agricultural producers” ([43] p. 12). Of prime importance is the rural credit and technical knowledge. Peasants and peasants’ cooperatives in possession of newly acquired title lands can accomplish little, if anything, without access to adequate financial resources, enabling them to purchase seeds, stock, tools, fertilizers, pesticides, etc. and install water supplies in some cases. Therefore, the Lula administration’s larger average-sized settlements do not imply more quality than those of previous administrations. Nonetheless, given data restrictions, it is not possible to analyze land fertility or infrastructure elements such as access to schools, electricity, roads, medical services, and so on.

Violence over land disputes has dramatically decreased when coupled with land redistribution. When there is real distribution to families who need it most, it enables productivity, and these families leave the poverty line, reducing the pressure for survival and for land disputes.

Table 3. Results in land distribution relating to agrarian violence in democratic Brazil.

Land distribution and violence	Recent Democratic Governments					
	Sarney 1985–1990	Collor/Franco 1991–1994	Cardoso 1995–1998	Cardoso 1999–2002	Lula 2003–2006	Lula 2007–2010
Settlements Created	537	348	2,329	1,981	2,386	1,216
Families per settlement	115	81	100	72	76	65
Hectares per settled family	72	93	53	63	180	214
Average of hectares per settlement	8,278	7,515	5,319	4,540	13,683	13,941
Killings over land disputes	672	199	150	120	189	115
Average of killings over land dispute/year	112	49.75	37.5	30	47.25	28.75
Ratio between created settlements and people killed	4.8	7	62.1	66	50.5	42.3

Source: Based on [16] and [27].

While during the Sarney administration there was one person killed for every 5 settlements created, in the Collor/Franco administration there was one person killed for every 7 new settlements. In the Cardoso administration, out of every 64 settlements, one person was killed over land disputes, and during Lula's government, the number was 46 new settlements per one killing over land disputes. That is the price paid in human lives to implement a public policy that is necessary to the survival of the peasantry, especially of the poorest. As more settlements are created, the tension between agrarian sectors over land acquisition decreases, as it allows more people to support themselves by farming their own land.

In terms of agrarian policy, the ineffectiveness of the State must be considered, regardless of which government currently holds office. According to data from NERA, there is a disparity that stands out between the number of families each settlement could hold and the number of families actually placed in these settlements. That is, in the twelve-year period observed in this study (2000–2011), 496,368 families could have been placed in the created settlements. However, the actual number of settled families was 366,621, or a 26 percent underperformance. This figure is not negligible, and could even improve the performance of the State with regards to civil society's demands for agrarian reform.

What can be inferred from the data presented in this study is that violence in rural Brazil is derived from a lack of political interest to carry out land reform and achieve a more equitable distribution by the different levels of Government, which would correct mistakes of the past and break the vicious cycle the country has been dwelling in for centuries. Rural Brazil, unlike its urban counterpart, is lagging, as cronyism prevails and laws are not respected [22], leading to a struggle between the strongest and the dispossessed. Extreme inequality among people creates insurmountable social chasms and requires state intervention to be repaired. The Brazilian State always favors large landowners and agribusiness.

7. Final Remarks

Democracy has ushered the freedom of individuals to be affiliated to social movements and allowed for their represen-

tation in State institutions. It has also retrieved citizenship for most of the poor, as well as bolstered the struggle for a more equal country where everyone can have the minimum to survive.

Brazil is far from enabling everyone to live a decent life and from being able to support all of its citizens during times of social and economic hardships. However, as presented, there have been significant advancements for the poorer sectors of the population living in rural areas in the past two decades. Brazil was the 7th world economy in 2012 [44], but ranked 81st in per capita income [44], which means that the country is rich, but the majority of the population is poor. Due to the country's size, there is still much to be done, and inequality must be reduced.

Land concentration in the hands of a few former plantation owners, who are currently operating in agribusiness, allied to a financial sector, which invests in agriculture, requires State action. It is understandable that strong interest groups have put considerable pressure to increase the amount of land destined to agribusiness in the country. However, democracy should serve all citizens, and allow the poor to raise their living standards in rural areas by giving them access to land. The best social program for peasants is a plot of land so that they can derive their own livelihood from their work. Certainly, the *Bolsa-Família Program* [45] helps the poor, but it has a temporary role to momentarily alleviate poverty. As long as it is supported by other public policy tools, like financing, agricultural capacitation, in addition to basic education, health and security services needed by all, access to land is the permanent solution for overcoming poverty.

As evidenced by the increased number of rural settlements created by the State in the past two decades, the strategies used by social movements to achieve land distribution for low-income peasants have had a positive effect. There is still a lot to be done to repair this extreme inequality, but the first steps have been taken and are developing. The violence applied by large landowners and the reaction of the State towards the peaceful activities organized by social movements perpetuate the victimization of the peasants. In this sense, public policies to decrease violence caused

by land disputes must be created, giving land to those that need it most. In order to avoid further bloodshed, agrarian reform must be a long-term commitment by the State, instead of belonging to this or that government at a given time in history.

The 'price' of a peasant's life in terms of new settlements is increasing and, today, as more settlements are created fewer peasants die as a result of land conflicts. However, the path to further reducing that ratio is long and difficult. Both the lack of State intervention in land disputes and/or the failure of the police to protect rural workers and landless people could be seen as reasons for peasants to die in agrarian conflicts in Brazil. More needs to be done in rural

areas to defend the poor and enforce the law, advancing democracy for all in Brazil.

Acknowledgements

I wish to express my sincere gratitude to the Land Project discussion group, headed by Wendy Wolford at Cornell University, where I spent twelve months during the academic year 2013–2014. I also thank FAPESP (São Paulo Research Foundation in Brazil), which gave me financial support during my stay at Cornell, and afterwards to present this paper at the International Studies Association (ISA) annual convention at Atlanta in 2016.

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- [18] The origin is actually historical. In the XV century, the Portuguese Crown, concerned with local production and tax collection, gave land to people for a period of time (*sesmarias*) so they would produce and pay taxes. This kind of production generated Plantations, which utilized slave labor in the Americas explored by the Europeans. This lasted until 1822, and originated the well-known *latifúndio* in the country.
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Appendix

Table A1. Socio-territorial Movements and Brazilian States in which they operate (2000–2011).

Acronyms	Translation of movements names in Brazil	Brazilian States where actions were taken
ABUST	Brazilian Association of the Social Land Use	SP
ACRQ	Association of Remnants of Quilombo Communities	MG, PE
ACRQBC	Association of Remaining Quilombo Communities of the Creoles Heath	MG
ACUTRMU	United Community Association of Rural Workers	MG
ADT	Association of Land Right	GO
AMIGREAL	Association of residents of micro regions of the state of Alagoas	AL
AMPA	Association of Small Farmers Movement	AP
ARST	Association Renewal of the Landless	SP
ASA	San Antonio Association	MT
ASPARMAB	Association of Small Farmers of Maraba	PA
ASTECA	Technical Association of Agricultural Cooperation	MT
AST	Association of Landless	PA
ASTST	Association of Landless and Homeless	MG
ATUVA	Association of United Workers of Vila Aparecida	PA
CAA	Alternative Agriculture Center	MG
CAR	Center of Roraima Settlers	RR
CCL	Citizenship and Leadership Center	MG
CETA	Coordenação Estadual de Trabalhadores Assentados	BA, RS
CLST	Liberation Way of the Landless	MG
CODEVISE	Defence Committee of Victims of Santa Elina	RO
CONAQ	National Joint Coordination of Quilombo Communities	ES
CONLUTAS	National Coordination of Struggles	SP
CONTAG	National Confederation of Agricultural Workers	AC, AL, BA, CE, DF, ES, GO, MA, MG, MS, MT, PA, PB, PE, PI, PR, RJ, RN, SP, TO
COOTERRA	Cooperative Farmers in the Struggle for Land	BA
CPT	Pastoral Land Commission	AL, BA, CE, MG, MS, MT, PA, PB, PE, PI RN, RJ
CTV	Land Alive Center	SP
CUT	Workers' Unitary Central	AC, MS, RS, SP
FATRES	Support foundation to rural workers and farmers of the Sisal and semi-arid	BA
FERAESP	Federation of Rural Workers of the State of São Paulo	SP
FETRAF	Workers Federation of Family Farm	DF, GO, MG, MS, PA, PE, PI, SP
FRUTO DA TERRA	Land Fruit	DF, GO, MG, MS, PA, PE, PI, SP
FST	Triangle Social Forum	MG
FUVI	United Families of Valley Vilhena	MS
GERAIZEIROS	North of Minas Gerais Geraizeiros	MG
GRUPO XAMBRE	XAMBRE Group	PR
LCC	Peasant League Corumbiara	RO

Table A1: *Cont.*

Acronyms	Translation of movements names in Brazil	Brazilian States where actions were taken
LCP	League of Poor Peasants	AL, CE, GO, MG, PA, RO, SP
LOC	Workers Peasant League	MG
MAB	Movement of People Affected by Dams	CE, MG, MT, PB, PR, RS , SC
MAST	Movement of Landless Farmers	SP, PR
MATR	Movement in Support of Rural Workers	DF, GO
MBUQT	Brazilian United Movement Searching for Land	SP
MCC	Peasants' Movement of Corumbiara	RO
MCNT	Movement Conquering Our Land	PA
MCP	Movement of the People's Councils	CE
MCST	Movement of Landless Needy	SP
MLST	Movement for the Liberation of the Landless	AL, GO, MG, PE, PR, RN, SP
MLSTL	Movement for the Liberation of the Landless Fight	MG
MLT	Movement of Struggle for Land	AL, BA, MG, SP
MLUPT	Movement United Fight for Land	MG
MMA	Movement of Women Farmers	CE, PR, SC
MMC	Movement of Rural Women	AL
MOVIMENTOS INDÍGENAS	Indigenous Movements	AL, AM, BA, CE, ES, GO, MG, MS, MT, PB, PE, PR, RO, RR, RS, SC, SP, TO
MNF	Landless Movement New Force	SP
MPA	Small Farmers Movement	DF, ES, PA, RJ, RO, RS
MPRA	Popular Movement for Agrarian Reform	MG
MPST	Popular Movement of the Landless	MG
MPT	Pacific Movement	SP
MRC	Peasant Resistance Movement	BA
MSO	Organized Social Movement	PR
MSONT	Land Dream Movement	PR
MSST	Social Movement of the Landless	AL, PR, RJ
MST	Landless Workers' Movement	AL, BA, CE, DF, ES, GO, MA, MG, MS, MT, PA, PB, PE, PI, PR, RJ, RN, RO, RR, RS, SC, SE, SP, TO
MST DA BASE	Landless Workers' Movement Base	SP
MSTA	Landless Movement of the Amazon	AM
MSTR	Trade Union Movement of Rural Workers	ES, RO
MT	Workers Movement	AL, PE
MTA	Settlers Movement of Workers	DF, MT, RO
MTAA	Movement of Camped Workers and Settlers of Mato Grosso	MT
MTB	Brazil Land Movement	PE, PR, SP
MTD	Movement of Unemployed Workers	BA, DF, RJ
MTBST	Landless Brazilian Workers Movement	PE
MTL	Land, Work, and Freedom Movement	AL, BA, GO, MG, PB, PE, RJ
MTL-DI	Movement Land, Labor and Freedom - Democratic and Independent	GO
MTP	Land, Work and Progress Movement	AL
MTR	Movement of Rural Workers	MG, MS, MT, PR
MTRST	Landless Workers' Movement	ES
MTRSTB	The Brazilian Landless Workers' Movement	SP
MTRSTP	Movement of Landless Workers of Paraná	PR
MTRUB	Movement of Rural and Urban Workers	PE
MTS	Movement for a Socialist Tendency	RJ

Table A1: *Cont.*

Acronyms	Translation of movements names in Brazil	Brazilian States where actions were taken
MTST	Movement of Landless Workers	MG, PE, PR, SP
MTSTCB	Movement of Landless Workers and Central of Brazil	SP
MTV	Land Alive Movement	SP
MUB	Brazilian United Movement	SP
MUST	United Movement of the Landless	SP
MUT	Movement United for Land	PR
OAC	Agrarian Peasant Organization	PR
OITRA	Workers Inclusion Organization for Agrarian Reform	SP
OLC	Organization for Action in the Field	BA, PE
OLST	Organization for the Liberation of the Landless	MG
OTC	Organization of Workers in the Field	CE, GO, MG, PA, PR, RO, RS, SP, TO
QUILOMBOLAS	Quilombolas (Maroons)	BA, ES, MG, PE, PR, RJ, SP
RACAA SUL	Service Network of Camped and Settlers of Southern Bahia	BA
RC	Peasant resistance	PI
SINPRA	Union of Small and Medium Farmers	PA
ST	Landless	SE, SP
STL	Union of Workers in Farming	RN
TERRA LIVRE	Field and City Popular Movement	GO
TUPÃ 3e	Workers of the Municipality of Tupanciretã	RS
UAPE	Union of Pernambuco Farmers	PE
UFT	Union Strength and Land	MS
UNASFP	The Pasture Fund Associations Union	BA
UNIDOS PELA TERRA	United by the Land	SP
UNITERRA	Union of Social Movements for the Land	MG
USST	Union of Landless Santanenses	RS
UST	Workers Trade Union	SP
VIA CAMPESINA	Via Campesina	BA, MG, PB, PI, PR, RS, SP

Research Article

On Unstable Ground: Issues Involved in Greening Space in the Rocinha Favela of Rio De Janeiro

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Submitted: 5 August 2015 | In revised form: 26 March 2016 | Accepted: 1 April 2016 |

Published: 31 May 2016

Abstract: This paper is based on fieldwork undertaken in conjunction with *Green My Favela*, a land use restoration project that works with informal and vulnerable income sector residents to reclaim chronically degraded public areas by creating gardens inside the urban favelas of Rio de Janeiro, Brazil. The paper reveals how government intervention policies employed in the lead up to the 2016 Olympics are destabilizing the fragile social fabric of the city's largest favela, Rocinha, through military occupation and urbanization activities that threaten an already low and unstable human security threshold.

Keywords: Environmental restoration; favelas; pacification; public security; Rio de Janeiro; urbanization

1. Introduction

Brazil is a country with one of the highest economic disparities in the world, where half of the people survive on only ten percent of the income, and more than a quarter live below the federal poverty line. Rio de Janeiro is the second largest city in Brazil—home to approximately fourteen million people of whom approximately 27% live in dense informal or irregular settlements (favelas) in areas that suffer from state neglect, resource scarcity, and fluctuating levels of violence.

The Rocinha favela is a steep, heavily populated favela located in the South Zone of Rio de Janeiro. It consists of a cluster of more than twenty neighborhoods, made up of dozens of non-cohesive communities [1], and a myriad of fragmented subgroups and sublocations [2]. Rocinha's geopolitical complexity, its economic importance, and its built density offers a rich and multilayered template for exploring how government intervention [3] plays out on the ground to impact on community-centered environmental restoration (ER) and preservation efforts.

The series of case reports described below are based on fieldwork undertaken while attempting to establish a series of micro-scale gardens in Rocinha between 2011 and 2014. The work was carried out in conjunction with *Green My Favela* (GMF), an ER project that works with favela residents to remediate chronically degraded space and make gardens inside Rio's favelas. The projects provide a working platform from which to explore how the interventionist actions of the state of Rio de Janeiro theoretically hold the capacity to support small socio-environmental efforts within Rocinha, but instead are further unraveling the already fragile social fabric of a favela in distress.

The research focuses on how urbanization and police pacification go hand in hand to affect or interface with ER efforts located within various neighborhoods inside Rocinha. It also describes how drug trafficking and other intra-community conflicts, relationships, and expectations impact on the micro-gardening projects discussed, and evaluates if it is feasible to cultivate productive, green public space inside Rocinha under these conditions. It explicates

how activities and behaviors around remediating degraded space are impacted by a myriad of government policies, armed conflicts, State [4] abandonment, and social exclusion which interweave to define the complexity of working in Brazil's largest urban favela. These issues compound to make Rocinha an extremely volatile and difficult place in which to try to establish safe and productive public space.

Recognizing how community-centered ER efforts are impacted by Rio's pacification—which connects at the nexus of public security, urbanization, and the 'war on drugs'—accordingly requires identifying the interplay of both internal and external social inequities and power relations. How these policies are both aimed at gaining territorial control over favelas in order to further the interests of the ruling class is critical to understanding whose voices Rio's policies serve, and whose voices are ignored in the process. This state of affairs has been thoroughly critiqued by a diverse range of scholars [5].

Studies which focus on the structural realities of socio-environmental policy include scholars such as Raquel Rolnick, who has been influential in revealing how social inequities in the judicial system penalize the poor. In addition, Gomes and Barbosa's research focuses on urban sustainability as mechanisms of control and resistance [6], and Lucas Cavalcante's writing examines the wider discourse surrounding urban sustainability and policy implementation by focusing on specific impacts and limitations of interventions in some of Rio's smaller favelas [7]. While there is also a sizeable body of evidence available about the interconnectedness of environmental vulnerabilities and resource inequities, political promises to establish frameworks to tackle these problems remain largely unfulfilled.

Advancing urban and socio-environmental policy is defined as a key outcome of Rio's Master Plan for Sustainable Urban Development, as laid out in Complementary Law No. 111/2011 [8]. Specifically, under this law, the municipality has formulated and implemented policy based on a range of principles, including: environmental conservation and social equity; appreciation, protection and sustainable use of the environment; universal access to infrastructure and urban services; promoting broad social participation; universal access to land; cooperation between various government bodies, the private sector and other societal sectors in the urbanization process in compliance with social interest; preservation of environmental areas; integrated planning and urban management aimed at ensuring the sustainable development of the City; coordinating the actions of all levels of government to promote initiatives of common interest concerning the environment, environmental sanitation, urban infrastructure, and public services; the urbanization of favelas, irregular and illegal settlements, with the implementation of infrastructure, sanitation, public facilities, recreational areas and reforestation, aimed at their integration into formal areas of the City, except in the situations of risk and environmental protection; the adoption of urban solutions that increase the safety and avoid fragmentation and compartmentalisation of the urban fabric; the recovery,

rehabilitation and maintenance of public open spaces built on degraded or underutilized areas; promoting the appropriate use of empty or underused or idle land, prioritizing its use as open spaces for community use, parks, green areas and recreational areas; and promoting democratic management of the City.

As this paper aims to demonstrate, to date the implementation of this municipal policy framework has largely failed Rocinha. In addition, there has been little analysis as to how these policies impact on community-centered efforts that aim to rehabilitate degraded land. Little attention has been paid to how these policies support or impede specific attempts by irregular sector groups to insert themselves into this ER framework, or to analyze the results of policies that are delivered in either limited or inconsistent ways. Therefore, there is still a need to investigate (i) the reality of socio-environmental interactions in favelas (ii) the micro-impact of policy failure within favela communities in regard to ER, and (iii) any potential socio-environmental policy shifts that could benefit Rocinha and other large favelas or favela complexes like it.

2. Objectives and Scope

Enacting any form of environmental remediation inside of almost any of Rio's urban favelas requires overcoming a range of socio-political, socio-economic, public security, and geographical complexities. This presents a formidable challenge. In the context of Rocinha, where risk of conflict is strongly perceived [9], fear and mistrust is embodied in a range of physical and symbolic structural assemblages [10]. In addition, many forms of social interventions reinforce the concept of colonial oppression and produce a spiral of meanings and volatile behaviors that react to the interests at play [11]. Accordingly, by examining what actually happens in the field, it is possible to see how environmental restoration efforts interface with the structural inequalities of a socially segregated city [12] where both macro and micro conflicts are catalyzed or accelerated by events and approaches that generate mistrust and fear.

As such, this paper seeks to bring to light the interplay between specific social, environmental, and security challenges encountered in Rocinha during the first three years of pacification, using the ER projects that GMF has participated in as a field guide. The study aims to explore if ER projects can be sustained; if they produce benefits for residents; how State intervention impacts on these projects; how this relates to issues associated with territorial control and access to land; and what macro- and sub-level conflict arises between actors as a result. Moreover, it attempts to reveal the complex social interface of Rocinha under pacification, and to identify incongruities in values, interests, knowledge and power relations between State and non-State actors.

The research may be useful or of interest to those working inside non-international internal armed conflicts, or within the areas of public security policy, fragile cities, en-

environmental remediation, poverty studies, informality, urban planning, or urban agriculture.

3. Methodology

The bulk of the qualitative information collected for this paper was obtained in the course of co-producing the seven ER/gardening projects discussed below. The research is primarily based on material gathered from the many unstructured conversations and interactions had by the author and other members of the GMF team while working in Rocinha with residents to make gardens between November 2011 and March 2015. It links to the pillars of action research in that it involves processes of collective problem solving and engages with community efforts that are inextricably tied to collective action [13–16]. It also interfaces with what Bogdan and Biklen interpret as the collection of evidence designed for the purpose of exposing unjust practices and environmental dangers, and for assessing or recommending actions for change [17].

Crime statistics provide a source of secondary data; however, the difficulty of obtaining reliable figures due to underreporting made the fieldwork an important measure for qualifying official public data [18]. By working with different actors and various social interfaces over a prolonged period of time, these field actions were instrumental in yielding a nuanced understanding of the evolving macro- and micro-level political structures that operate in Rocinha, and how they differ from neighborhood to neighborhood.

The projects were located in various parts of Rocinha, were of different sizes and types, and involved a variety of actors [19]. The diversity of the projects provided a variety of fields and social interfaces in which to work—in various neighborhoods with a wide range of poverty levels; a disparate array of working partners; assorted plots of degraded land; different grades of infrastructure and resource access; various levels of capital investment; fluctuating levels of human security; conflicting forms of armed governance; and significant social and natural geographic variances. The work aligned with the stated social goals of government intervention—in particular in regard to producing the sustainable social occupation of space [20].

4. Organizational Framework

GMF was used as the organizational framework through which to approach this study because it offers a unique structure through which to interface with many different social planes. GMF is a locally based international organization founded by the author in 2010. It is a collaborative, action-based ER organization and research support platform that works with individual favela residents, residents' associations, NGOs, schools, and multiple tiers of government, to improve existing urban space by remediating degraded lands and making gardens. GMF works with concepts of practical hands-on knowledge exchange to open up opportunities for people, materials, ideas, and organiza-

tional assemblages to reshape space that has long been prone to abuse and neglect. These spatial co-productions aim to explore how the informal sector can drive and participate in the re-generation of safe social space and improve the daily lives of favela residents.

GMF also collaborates with a range of external partners including private philanthropists, academic institutions, grassroots organizations, research networks, artists, social innovators, and individual researcher/practitioners working in an array of diverse fields (including sustainability, anthropology, landscape architecture, environmental ethics, the arts and humanities, policy studies, global studies, environmental studies, and urban planning). In addition, GMF explores, advises on, and attempts to implement solutions that address issues relating to garbage and recycling, food and water security, public health and educational programming inside favelas.

5. Background and Context

The history of Rio de Janeiro's favelas began in the late 1880s with the abolition of slavery as Brazil transitioned from the Portuguese empire to a Republic in its own right. Throughout the course of the next century, the city's favelas grew and experienced significant changes. Initially, these communities were made up of a mixture of squatter settlements, farming communities, and legally parceled residential areas. In time, rural-to-urban migrants and itinerant laborers also began to occupy favelas. As various formal residential and industrial areas were abandoned, these too became informal occupations. Decades of removals of these low-income populations have also shifted urban density from one favela to another.

As favelas became more numerous and increasingly populated, residents began to organize, forming local associations and labor unions. These organizations served as forums for deliberating on community matters. Since the government failed to extend public services or legal protections to the favelas, community members, led by their local associations, formed their own systems of transportation, sanitation and utilities services, commerce, and governance.

Amidst the political turmoil of the 1980s, the City of Rio de Janeiro became an important export node for cocaine transiting from the Andes to the United States and Europe. It also developed as an internal consumer market for the drug. As a consequence of the evolving drug trade, levels of violence skyrocketed. By the mid-1990s, Brazil was considered one of the world's most violent nations not in a state of war, and Rio's favelas began to be compared to internal armed conflicts.

The favelas, with their unmapped geographic complexity and built density, and without the protection of the State, became prime territory from which the drug trafficking gangs operated. As gangs took over the control of more and more favelas, the young men living inside their boundaries came under intense pressure to join the trafficking culture. They also became the principal victims of homicide, not only as

a result of gang-related incidents, but because of the enormous number of extra-judicial killings that Rio's police have become so infamous for. Rio's multiple military and civil police forces, notorious for using extreme force with almost total impunity, were responsible for 8,466 deaths in the state of Rio de Janeiro between 2004 and 2015. Statistics show that, on average, four out of every five victims that die at the hands of police are poor, black and aged between fifteen and 29 years of age [21].

In 2006, in order to satisfy the International Olympic Committee, Rio began to devise a series of interventionist policies designed to overcome this violent image and offer a more alluring and marketable picture of the city. Several state and municipal policies and programs have since emerged, including the Unidade de Polícia Pacificadora (UPP), a state military campaign that was implemented to secure territorial control over strategically located favelas; and Morar Carioca (the Informal Settlements Integration Program), an urbanization program designed as a cornerstone of Rio's Olympic City legacy, as laid out in the city's Master Plan for Sustainable Urban Development [22–25].

As a result, almost ten thousand UPP military troops have been deployed to favelas, and R\$ 8 billion has been pledged to 'upgrade' and 'integrate' favelas into the formal city. The favela upgrades include the installation of sanitation, water drainage, street lighting, roads, public green spaces and recreational areas, transportation networks, home stabilization, and social service centers [26]. The UPP coordinates with the Municipal Housing Secretariat (SMH)—the department that oversees the city's urbanization projects—to facilitate the regularization of utilities and services, to shut down informality, and to enforce housing removals.

More than delivering anything else however, Rio's urbanization projects have provided an abundance of lucrative state-backed corporate profiteering opportunities to a select few. Public contracts have been exclusively awarded to a handful of private consortium and construction companies that, under current policies, are able to skirt normative democratic processes under the banner of the Olympics legacy [20]. This accelerated neoliberal policy or the "festivization of politics" as Häußermann and Siebel describe it [27]—is designed as a landscape of exceptionalities in which favela territory is appropriated without due process [22,28] in order to advance political and private gain.

Rather than integrating favelas, creating critical infrastructure, promoting community-led social projects, addressing unemployment, mitigating the spread of disease, providing public security and so on, these programs—at tremendous public cost—have done little more than protect the bourgeoisie and generate enormous profit for the large-scale entrepreneurs that are the major private contributors to the electoral campaigns of Rio's governor and mayor [20]. This slew of top-down interventions disguised as social investments are decided by politicians and corporate entrepreneurs who insist "they know what is good for the city" [22], yet for all intents and purposes they appear to be designed to be good for themselves.

6. The Layout of Rocinha

The Rocinha favela is Rio's most thickly populated informal settlement, with more than twenty neighborhoods tightly packed into less than a square kilometer of land (Figure 1). Census reports calculate the population at 69,000 [29] but unofficial estimates reach as high as 200,000. Whatever the actual figure, Rocinha is the largest of Brazil's favelas, where most residents subsist in closely packed housing units stacked up to eleven stories high.

This self-contained city is a compact concrete labyrinth comprised of dark, narrow tunnels (Figure 2) and steep winding alleys littered with mounds of garbage and snaking grey streams of open sewerage that spill down the steep mountainside to the ocean below. One congested main road twists through it from top to bottom. Motorbikes ferry residents up and down through a jumbled network of housing and commerce bubbling with lively and vivacious social exchanges taking place in the markets, stores, bars, restaurants, schools, and churches.

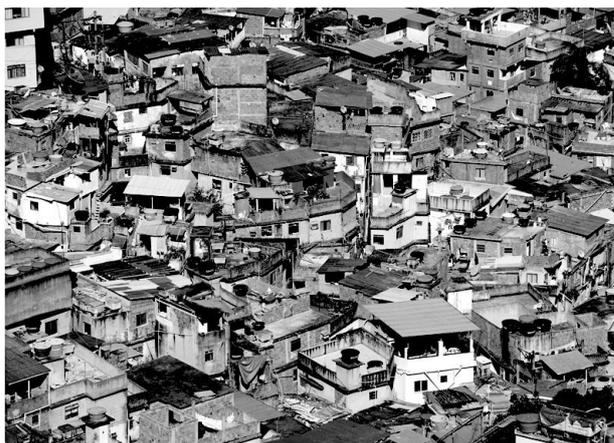


Figure 1. Detail of Rocinha favela housing.

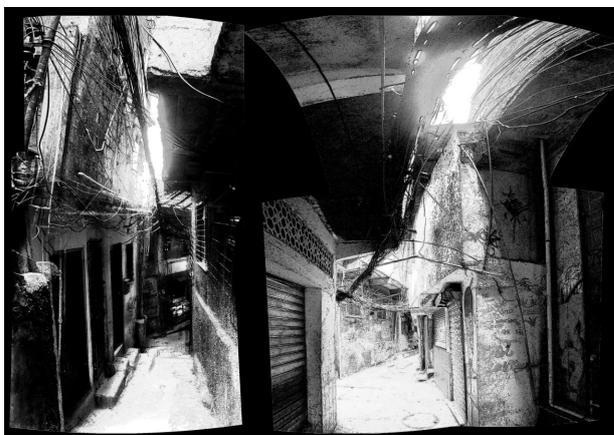


Figure 2. Rocinha becos (alleyways) in the Valão neighborhood.

The favela is geographically squeezed in between two of the Rio's most affluent neighborhoods, São Conrado and Gávea. It falls almost at the bottom of the city's Human Development Index (HDI). While the HDI of Gávea surpasses that of Norway (the country with the highest-ranking HDI in the world) a hundred yards away in Rocinha, average life expectancy is cut by thirteen years [30].

Though living conditions in specific favelas under pacification vary depending on context and institutional arrangement, the people face common struggles that can be largely characterized by the use of force wielded by the power of the State—wherein vertical public policies deliberately silence residents and leave little room for effective community participation—through the naturalization of structural inequality that is a deliberate extension of historical segregation [31].

7. Control and Security in the Favela

The majority of Rio's favelas are governed by “micro-level warlords” [32] that control the three major gangs that monopolize Rio's lucrative drug trafficking economy. Rocinha plays a major part of this trafficking landscape. It has been suggested that as much as R\$ 100 million is generated from the drug trade annually in this favela alone [33].

For decades, Rocinha was governed by a succession of drug trafficking bosses and gangs, each of which resulted in a series of violent events that dictated the course of trafficking in the community. In 2004, Antonio Bonfim Lopes, known simply as Nem, took control of the favela to govern under the banner of the Amigos dos Amigos (ADA) gang. Under Nem, Rocinha functioned in relative peace and unity. Nem was considered somewhat of a benevolent leader who was rumored to have entered the drug trade as a way to pay for his baby daughter's critical health care needs (she suffered from a rare blood disease). Nem won the respect of many residents by establishing a series of community services such as food banks.

At the beginning of Rocinha's pacification in November 2011, however, thousands of state anti-terrorist military units moved into Rocinha on *masse*—in foot battalions, with dogs, and on horseback, supported with armored tanks and helicopters. Nem was arrested and many of his senior dealers were killed. Consequently, the ADA hierarchy crumbled and traffickers splintered into sub-groups, which has sparked an internal conflict for control of territory. Though 700 UPP officers are now stationed in Rocinha, operating out of several military posts which control the most accessible parts of the favela, the ADA is still a major drug trafficking force to contend with, despite their internal turmoil.

Currently the ADA leadership of Rocinha is unified under Rogério Avelino da Silva, the drug boss known as Rogério 157. Since pacification, the ADA has reestablished a significant presence in at least six neighborhoods, including the Valão, Cachopa, Macega, and Porto Vermelho. However, many ‘soldiers’ and ‘managers’ are restless under Rogério's leadership. This has triggered several factional takeover attempts that manifest in unpredictable and in-

tense exchanges of gunfire. Therefore, Rocinha residents not only endure battles between the UPP and the ADA, and between the ADA and the CVs (who vie for control of the upper reaches of the favela), but also between competing factions within the ADA. Adding to the instability, the UPP have also been accused of corruption, torture, drug trafficking, rape, extra-judicial killings, and disappearances.

The UPP is expected to remain an implemented policy at least until the realization of the Olympic Games. However, as the state sinks deeper and deeper into a negative economic growth crisis, together with the loss of the UPP's principal funders [34], pacification looks less and less viable over the long-term. It is generally assumed that the policy will be, in large part, dismantled after the Games, leaving a power vacuum that is likely to lead to extensive bloodshed as drug trafficking factions compete to reestablish territorial control.

8. Understanding Urbanization

Along with the military intervention of pacification, Rocinha was granted federal investment funding of R\$ 231.2 million to be directed toward urbanization interventions that were contracted to private enterprises to provide infrastructure, housing and community facilities, and to recover degraded areas [35]. The funding was assigned to Brazil's Growth Acceleration Program (PAC) and dispensed in part by the state and the municipality.

Urbanization projects often begin with the removal of residents from their homes. Scholars Luke Faulhaber and Lena Azevedo estimate that more than 65,000 people, mostly from low-income areas and informal settlements, have been evicted in the lead up to the Olympics, many forcibly and through violent processes [36]. Yet the city continues to defend its housing policy and denies compulsory removal without guarantee of a new home or compensation by negotiated resettlement [37]. Even so, the Municipal Court of Auditors has found the SMH legally responsible for failing to pay compensation to families in Rocinha [38]. And though Rio's Mayor, Eduardo Paes, directs critics to a government web portal that details the transparency of the policy as it effects each neighborhood, the data sets consist of nothing more than empty fields. Therefore, any access to technical reports, the number of expropriations, the cost of resources, the number of removed families, and where they have been relocated to, remains obscured [39].

City Hall justifies many removals through claims of safeguarding residents that are geologically at-risk of landslide. The threats are calculated by the municipal ‘Geo-Rio’ program, which surveyed and identified six high geo-risk areas in Rocinha [40] and subsequently designated the removal of 543 families and the demolition of their homes [41,42]. According to a 2014 human rights violation report, evictions happen without community discussion, and without residents having access to information that justifies the need for their removal [43]. In addition, the demolitions leave abandoned, semi-bulldozed ruins and piles of rubble in their wake which become areas that present an array of public health and safety risks as well as leaving families homeless (Figure 3).

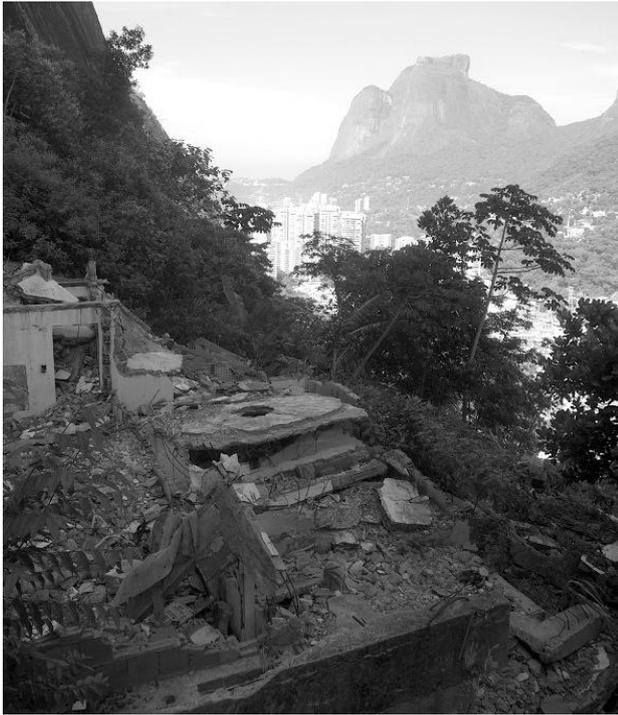


Figure 3. Demolished housing, Macega neighborhood of Rocinha.

Removals are also premised on protecting forested conservation areas. In 2008, 182 favelas encroached on, or were found to be located within 400 meters of protected environmental areas (APAs). Between 2003–2008 Rocinha expanded into its neighboring APA by 4.34%. In 2009, according to technical estimates by City Hall, there were at least 850 homes in the Vila Verde and Macega neighborhoods of Rocinha that needed to be removed because they were located in São Conrado’s Area of Ecological Interest. In Macega, according to the municipality, at least 50 houses had been built in the APA in a number of months. However Leonardo Rodrigues Lima, spokesperson for the Pro-Improvement of Rocinha Union, denied the claim, stating that “Of course in Rocinha there are people in risk areas surviving in miserable conditions. But there are no shacks in the environmental area”. Instead, he claims, it is the affluent formal residents of São Conrado and Gavea whose mansions impede on the forest [44]. Though the problem of eating into the Atlantic rainforest is important to address, City Hall’s solution—to build a series of ‘eco-walls’ around the favela to contain it—has been heavily criticized, with comparisons being drawn between Rio and Israel’s Segregation Wall. The construction of the walls also involves removals of families, which in turn has led to more unsustainable development in other parts of the Atlantic Rainforest as people rebuild where they can.

The spatial restructuring of Rocinha is also subject to other crises. PAC invested R\$ 219.3 million in infrastructure projects in Rocinha, yet due to overspending, work ground to a halt in 2011 [44], leaving half-finished projects abandoned. Construction sites and semi-completed buildings

have become squats for people in need of housing [45], while the lack of basic sanitation and education continue to remain critical problems. Rocinha’s community leaders have appealed to federal prosecutors to investigate the State Secretary for Works (responsible for implementing PAC projects) for spending on low priority projects which were either not completed or were hurriedly opened to coincide with elections. Some residents were intimidated by PAC to leave their homes without being compensated fairly, and as a result they have had to accept a much lower standard of living. As the PAC projects failed to advance, their abandoned homes, some of which had belonged to the same family for generations, were taken over by drug dealers and addicts [46].

Many question the nature of Rocinha’s upgrade interventions and their ability to fulfill residents’ needs without creating unnecessary negative impact. José Martins de Oliveira, founder of Rocinha sem Fronteiras (Rocinha without Borders), reflects the sentiment of Rocinha residents by making the point that, more than anything, upgrades need to focus on improving sanitation conditions in order to reduce diseases such as tuberculosis, dengue, zika, and hepatitis, all of which present substantial health problems in Rocinha [47,48].

9. Greening the Favela in a Climate of Risk

The opportunity to work in various locations throughout Rocinha has provided a unique position from which to examine issues relating to both the social and military interventions brought about by pacification. If the attempts at creating urban gardens discussed below can be broadly understood as fragile negotiations between space and conflict, then they can help expose the fundamental spatial-political incongruities in Rocinha at this time. These projects reveal the duplicitous policies and concealed patterns that working in these circumstances present. They also point to how contributing to reshaping public space could potentially serve as a way to forge, modify and expand community experience and affiliations.

For the purposes of this report, the processes involved in creating community gardens in Rocinha are activities that can be generally characterized as attempts to produce various forms of productive green space. The benefits of the provision of parks [49], the therapeutic activities related to gardening [50], and the gains presented by urban agriculture in underserved communities [51] are all well documented. The production of desirable and publically accessible green space holds the potential to strengthen mental health, provide therapeutic support, build capacity, encourage cooperation, exchange knowledge, cultivate inclusivity, and reduce poverty, yet inside informal urban settlements such as Rocinha, residents are often deprived of such opportunities.

The cultivation of productive green space, as a viable urban poverty intervention strategy has been thoroughly discussed in much literature from the 1960s on. Studies

have been carried out, particularly in relation to the socio-economic benefits of urban agriculture in various categories, including home production systems and open space locations [52]. However, scholarly texts that specifically discuss urban agriculture in the inner-city favelas of Rio are relatively few [53–57]. In addition, though studies have been conducted in relation to conflict resolution regarding rural land tenure [58], there are few studies that pay attention to the interface between gardening and its relationship to territorial conflict inside fragile informal urban contexts [59,60].

Concerns about undernutrition, cancer, heart disease, diabetes, asthma, obesity, depression, and emotional stress in urban populations are growing. Diminished decision-making capacity is also beginning to appear in studies as a consequence of poverty, with far-reaching effects [61–63]. In informal settlements, these problems are enormous and demand multi-level responses [64].

With an estimated one billion more people expected to be living in informal poverty conditions within the next twenty years, a primary concern is food security. Urban farming offers informal communities huge benefits. In Rio, where food prices can jump as much as 17% in a month, reducing this vulnerability to the market is extraordinarily valuable for low-income earners living in a state of economic instability [56].

The relief brought through therapeutic and educational resources that gardens provide has been shown to be beneficial to physical and mental health. Parks and gardens are increasingly valued for their restorative qualities. Significant benefits have been proven to be associated with having access to nature, including its ability to relieve stress and cultivate a sense of stewardship for the land. Psychologically there is satisfaction that comes from the joy of growing and sharing food. These activities can contribute to relationship building that, in turn, can lead to community cohesion and enhanced levels of belonging. This is connected to building social capital [65,66], an important aspect of wellbeing that encourages cooperation among individuals and groups, and an essential component of a functioning society [67].

The physical benefits just from being able to view gardens are measurable in reduced blood pressure, diminished pain levels, fewer physical complaints, and accelerated healing [67]. Community gardens have also become recognized as an important means with which to recover from or cope with conflict and war [68]. So what does it mean to green even ten square meters of Brazil's most densely populated favela? Can such projects offer opportunities to learn about environmental education, gain a better understanding of nutrition, enhance food security, reduce pollution, mitigate erosion, or improve social space—and can such space be sustained in a climate of conflict and risk?

10. GMF Field Actions Report

The field actions described below are collaborative projects conducted by GMF over a three-year period. They generally follow the same production format, to:

1. identify an available site;

2. establish relationships with favela residents, local stakeholders, and external partners (step 1. and 2. may be reversed or happen simultaneously);
3. obtain relevant permissions with various state and non-state actors (including gang authorization) to move forward;
4. coordinate human, physical and financial resources;
5. engage in collaborative actions to create food, medicinal, or therapeutic gardens;
6. transition management to residents;
7. provide ongoing support if requested.

Once access to a site has been gained, the work begins by clearing trash (Figure 4). The first and most fundamental step of creating a community garden in the favela is the removal of tons of trash and housing debris. This is often the most challenging work, to remove massive amounts of garbage and rubble manually by carrying it up or down long, winding, slippery and narrow, tunnel-like *becos* (alleyways; Figure 2). To trek through this 80+ year old, steep, densely packed favela with heavy loads of everything from the remains of collapsed or bulldozed housing to old appliances and bags of heavy waste, to and from areas reachable only on foot, requires great effort and considerable physical labor, and can at times pose a threat to personal security.

Once a site has been cleared and cleaned up, infrastructure is built—terraces, retaining walls, fences, garden beds—and water tanks installed. Soil, seeds and tools are provided, irrigation systems are set up, compost and worm bins are assembled. Advice on organic agriculture, composting, and children's workshops and planting days are held. Once a garden is fully established and the community feels ready to fully take over governance and maintenance of a space, GMF steps away from the project and continues to provide adjunct support and resources upon request. The projects rely to a lesser extent on capital investment in hard infrastructure, and more on social infrastructure (human and social capital) as the critical assets needed to produce and maintain gardens.



Figure 4. Trash littering the ground in Macega.

10.1. Valão

Groundbreaking on the first garden in Rocinha began in November 2011 at the same time as the UPP occupation of the favela began to unfold. GMF's pilot project was a garden called *Rocinha Mais Verde*. The garden is located in the Valão neighborhood, one of the poorest communities in the favela, located at the bottom of Rocinha where the bulk of the open sewers flow. The Valão is a crowded, narrow and winding warren of cramped concrete residential structures built on top of one another so densely that little sunlight penetrates in many areas. The majority of the favela sewerage channels to this area. The sewers are clogged with litter and overflow during heavy downpours. Animal feces and trash cover the narrow pathways. The more open, accessible areas of the neighborhood are brimming with commerce and markets. Before pacification, this included *bocas* (street stalls that sell drugs, mostly cocaine), guarded by young teenage soldiers armed with heavy artillery. Since pacification, the *bocas* have disappeared into the nooks and crannies of the back alleyways, and the police now visibly display the heavy weaponry and regulate mobility through the more accessible parts of the neighborhood.

The *Rocinha Mais Verde* garden was Rocinha's first community garden. The project developed as a collaboration between GMF and the late Lino dos Santos Filho (Tio Lino), an important community leader who worked in Rocinha for more than 30 years to make art from recycled materials with children, with the aim of deterring them from joining drug gangs [69].

Tio Lino had gained access to a steep, vacant lot of land around 50 m² that had been used for years as a garbage dump. The land was adjacent to Tio's NGO—*Rocinha Mundo da Arte*—on a plot belonging to the *Alegria das Crianças Creche*. A two meter high pile of trash had built up on top of the site and another two meters had been compressed into the soil (Figure 5).



Figure 5. Trash buildup in the soil at the Rocinha Mais Verde space.

With funding from a private philanthropist, the physical help of 14 international volunteers, the children from Tio Lino's NGO, and a resident worker from Rocinha, GMF began transforming the space the week the UPP occupation began. First, the garbage was painstakingly hauled away. Some materials were repurposed, including bricks that were used to build a series of terraces, steps, pathways, and garden beds (Figure 6). The remaining trash was pried, sifted and raked out of the topsoil, which was then tested by Brazil's federal soil research facility, *Empresa Brasileira de Pesquisa Agropecuária* for nutrient and toxicity values. The soil was enriched with organic fertilizer, earthworms, and mulch. Trash was removed from a contaminated, underground water tank that then was cleaned and sealed. Pipes were laid to a new water supply that linked to city water. A compost pile was created, worm bins set up, and a simple homemade drip irrigation system was devised and installed by a resident using recycled plastic bottles.

Flowers, shrubs, fruit trees, and organic edibles were planted with the children from Tio Lino's art school. These hands-on educational workshops also included painting and drawing vegetables, studying seeds under microscopes and through magnifying glasses, tasting vegetables and taking them home to their families, and making terrariums from discarded plastic bottles planted with herbs.

Establishing security and governance over *Rocinha Mais Verde* proved to be complex. The project unfolded during the largest political upheaval the favela had ever seen, and the stress on the community was palpable. The garden brought attention from all sectors—police, residents, traffickers, government, and the international community. Progress became heavily influenced by security issues. First, the ADA traffickers had to approve and support the project. Then the head of the social arm of the UPP requested a meeting with GMF, which posed a huge security risk, and so was evaded. It has since been alleged that some of those who liaised with police during the early stages of the UPP occupation have been killed in gang retribution actions [70]. Others have been punished or intimidated by community members for their interactions with police.



Figure 6. Terracing Rocinha Mais Verde.

The location of the project in the Valão was a priority for police intervention during the initial phase of pacification. The military takeover of the favela was led by the *Batalhão de Operações Policiais Especiais* (BOPE) troops, who are infamous for their aggressive military tactics. At the beginning of the military occupation, both gardeners and children were intimidated by BOPE patrols. Security proved not simply an issue for police verses traffickers, but for the community as a whole. The threat amplified the community's conflicting feelings towards the practicality of cultivating public space. Despite their anxiety, however, community stakeholders chose to continue to move forward with the project amidst the chaos and uncertainty.

By June 2012 the daily governance of the space was fully in the hands of the art school, with GMF continuing to provide adjunct support to the project. The local resident who had worked with the project from the beginning was hired to maintain the garden and work with the children. GMF interns from an international environmental studies program from the University of California Santa Cruz, on exchange at PUC University in Rio, augmented the environmental education programming and created a planting schedule. The garden became a space that produced a range of herbs and seasonings, edible vegetables, flowering ornamentals, and fruit. More importantly, it developed as a therapeutic garden, learning space, an art space for children, and a space for local residents to visit (Figure 7). In total, around 200 people began interacting in or visiting the space.

Rocinha Mais Verde was subsequently showcased at the 2012 United Nations Rio+20 Summit on Sustainable Development as an outstanding example of sustainable design.[66] During the summit, GMF began advising Rio's State Department of Social Assistance and Human Rights to strategize on garbage collection, recycling policy, and programming inside Rocinha's public schools. As interest in the project grew, GMF began attending community meetings inside the favela, and identifying other spaces to work in [71].

Over the next two years, the project received much attention and flourished as a recreational and educational space where children participated in gardening-related activities (Figure 8). Within Tio's NGO, however, conflict began arising over issues of control and structure as a new director began redefining the organization. Relations between the NGO and the creche (the landowners of the garden) also began to strain.

R\$ 8,000 was awarded to the *Rocinha Mais Verde* project by the United Nations Development Programme (UNDP) to continue work in the garden. The money was channelled through *Rocinha Mundo da Arte*, but rather than generating enthusiasm, the grant set off a series of internal power struggles within the NGO. The competition for control over the newly acquired financial resources interfered with the ability of the NGO to focus on the task at hand, and resulted in the money being absorbed into the organization. This damaged relations between stakeholders. Later, Tio handed over the maintenance of the garden to the creche, which profited from it through a municipal grant they received to upkeep the space. As a consequence, the creche began to perceive outside participation as a potential threat to its funding. When the source of this funding ended, the garden fell into disrepair.



Figure 7. *Rocinha Mais Verde*.



Figure 8. Children's workshop at *Rocinha Mais Verde*.

In mid 2014, the project suffered a further setback with 63 year-old Tio Lino passing due to health complications relating to his diabetes, a condition that he had battled for years. Though Tio's legacy and organization was passed on to his family, it suffered a devastating loss of leadership and vision. A further two years on, the NGO and the creche continue to struggle for symbolic control over the project, as the garden continues to suffer.

This scenario reflects a level of inter- and intra-community conflict between individuals that is seen frequently in Rocinha. A lack of individual or group trust, coupled with an inability to resolve internal conflict may, in part, be due to the link between poverty and reduced cognitive function and decision-making ability [72]. The perceived scarcity of external funds may also be partially attributable to this sort of investment being so foreign to stakeholders. Other hardships, including the regular threat of armed conflict and the deeply established culture of drug trafficking, has also had a detrimental effect on individuals in their ability to deescalate conflict, feel comfortable with risk-taking, and apply clear thinking [73].

Studies indicate that the threat and anxiety associated

with such an increased cognitive load can hinder the processing of information, which in turn can impact on individual task performance [74]. Adding to this, individuals may perceive intra-community conflict between members of a group or groups as a challenge to their own capabilities or competencies [75]. This sort of intra-community conflict has been well documented in the studies of Carnevale and Probst [76]. Jehn and Bendersky [73] have further explored this scenario within group interactions by examining how group conflict narrows attention spans and inhibits integrative problem-solving abilities. Instead, group members are likely to respond to group conflicts by focusing on the turmoil rather than advancing the work. The consequences are that conflict impairs group performance, innovation, and work satisfaction [77].

Another issue Tio Lino's death brings to light in relation to the sustainability of these projects is the health of core individual participants. This plays a major role in whether or not these projects can remain viable over the long term. There are many inequalities that contribute to the health and health-care crises suffered by people, especially the elderly, who live in Rio's favelas. Most notably they have considerably lower life expectancy. Men, on average, live 12.8 years less than their counterparts in the formal neighborhoods that surround them. Even more shocking, for both men and women older than age 65 years, healthy life expectancy in favelas is less than half when compared to Rio's wealthiest sector [78]. A variety of environmental issues connected to the open sewer and the built density also raises the public health risk of contracting dengue [79] and tuberculosis [80], both of which are substantially more prevalent in Rocinha than anywhere else in the state. If ill health befalls project custodians or key actors, the health of social projects such as these can also be jeopardised. As Janice Perlman concludes from her work in favelas, "patterns of context, attitudes, behavior, and luck play out in the struggle to overcome the exclusion and dehumanization of poverty" [81].

Due to security constraints, it has not been possible to develop other projects in the Valão. Four years into the pacification, the area remains one of the most volatile neighborhoods in Rocinha. As of the time of this writing, tensions between trafficking factions, the UPP, and the BOPE teams that continue to patrol the area often result in exchanges of gunfire [82]. As a consequence of the collapse in the trafficking hierarchy, opposing factions vie for control of the drug trade in this neighborhood, adding to the incidents of armed conflict. In addition, since 2013, traffickers have established periodic curfews that are publicly announced by ADA foot soldiers who walk through the Valão shouting for residents to go inside in preparation for what has come to be known as 'a shootout at an agreed upon time'. With the *bocas* continuing to collect approximately R\$ 30,000 per month in drug sales, many consider it an economy still worth fighting for [83].

10.2. Cachopa

The second project GMF orchestrated in Rocinha was revitalizing a garden in a thin triangle of land located along

a well-traveled, steep and winding alleyway connecting Cachopa—a crowded neighborhood perched on a particularly steep hillside—to Rocinha's main road, *Estrada da Gávea*. Though it receives little sunlight and measures only six meters square, this little plot has a dramatic view of *Dois Irmãos* mountain and forms the scenery for hundreds of residents' journeys to and from work each day. Water pipes run just below the surface of the soil, which is critically eroded, and one side of the plot is a sheer drop-off. GMF worked with the neighbors of this abandoned lot to remediate the space. Trash was cleared and soil was brought in. Flowers, groundcover, herbs, and shade trees were planted in containers, crates and vertical planters. Vegetable and fruit vines were trained along the fence. A mural was painted on the wall, mirrored tiles were used as an aesthetic device and to increase the amount of sunlight the space received, and a worm bin was installed to process food scraps (Figure 9).

Initially the neighbors were estranged from one another, but the interactions that occurred through the activity of gardening opened up a relationship that involved not only material production but the exchange of ideas and emotions, which evolved into a social practice and created an opening for shared cultural experience. This laid the groundwork for fostering a form of solidarity, in that it created a willingness for neighbors to take the risk of helping each other through taking on an informal form of public responsibility [84]. The importance of this is that it formed the basis for trust, cooperation, and new social ties. The garden requires little maintenance, and though it has suffered some physical setbacks (a paint spill from another neighbor's house and the theft of some edibles), it continues to receive regular upkeep from its neighbors. Due to the heavy foot traffic that moves through the area, the space continues to earn a positive response from the general public. Over time however, the general social stability of the neighborhood has deteriorated.



Figure 9. Resident creating a trellis on the fence at the Pedacinho da Terra garden in the Cachopa neighborhood of Rocinha.

In early 2015, traffickers retook control of some parts of Cachopa [85] and the security situation became critically unstable. In February 2014, 60 traffickers armed with assault rifles attacked Cachopa's UPP post, injuring both the unit's general coordinator and its commander. The conflict spilled over into the Valão. Transformers, cars, surveillance cameras, and power generators were shot out, grenades were thrown, and tires were set on fire on the freeway at the entrance to the favela, causing the closure of Zuzu Angel tunnel which connects the districts of São Conrado and Gavea [86].

In addition, in September 2013 a nine year old girl was found raped and murdered in a vacant lot not more than a hundred meters from the Pacifying Police Unit in Cachopa [87], and in July 2014, a young woman was raped at gunpoint by a trafficker as she was walking home [88]. These actions in particular, demonstrate how the rule of gang law—that strictly forbade any form of sexual assault, theft or domestic violence—is no longer in place. Brutal as it may have been, the 'law of the favela' did function as a way to regulate and control social behavior. This has clearly dissolved under the UPP and the further destabilization of social order has disabled any opportunity to build social capital. The quality and extent of social interactions possible under the current security situation has shaped a daily norm whereby social cohesion cannot prosper.

10.3. Porto Vermelho

The Parque Ecológico da Rocinha (Ecological Park of Rocinha) was the focus of a cluster of GMF projects which began in August 2012. The R\$ 24 million invested by the State Fund for Environmental Conservation and Urban Development to finance the park was an attempt to provision for the APA at the boundary of Rocinha, and in doing so quell the backlash the State received after building a series of three meter high 'eco-walls' through the neighborhood to physically contain the area [89]. With a stated goal of arresting deforestation through the prevention and removal of housing in areas at risk of landslide, the government proposed building fifteen kilometers of these cement walls around fourteen of the city's favelas.

However, after the walls drew intense international criticism a new plan was needed to resell the concept to the public. In Rocinha, this involved designing the 9,000 m² ecological park. With impressive culture and leisure facilities [90], the park was to be nestled within in a small wedge of Atlantic rainforest between the *Portão Vermelho*, *Laboriaux*, and *Cobras e Lagartos* neighborhoods of the favela. The eco-walls would function to delineate park boundaries and to protect the Mata Atlântica (Atlantic Forest) APA area. The Atlantic Forest is one of the most diverse biomes in the world, yet it is critically endangered with only seven percent of original forest remaining. In the 25 years preceding the construction of Rio's first eco-wall in 2009, the state had lost 176,714 hectares of this fragile ecosystem [44].

The problems that manifest at the remote boundaries of the favela present many practical, ethical, political, health

and security dilemmas. The dense vegetation and remote isolation of the areas at the edges of Rocinha provide seclusion and escape routes for drug traffickers, making them precarious and dangerous. Many believe this was the primary reason behind the construction of the walls in the first place—to fence in the drug trade. State lawmaker Marcelo Freixo claims the government's strategy in building the walls was not to protect the forest but rather "to control poor communities" in order to appease the middle and upper classes. Further, though poverty may be linked to deforestation and habitat loss, it cannot be isolated from political and governance issues. Though there are an estimated 210 irregular constructions in Rocinha's APA, with a 300,000 low-income housing deficit crisis in Rio, Freixo believes that people living in favelas should not be blamed for the problem of deforestation. Additionally, the SOS Mata Atlantica Foundation draws attention to the fact that the forest is not only impacted by the expansion of favelas, but by the luxury condominiums, homes and hotels that continue to encroach on it with almost total impunity [91].

Raquel Rolnick [92] also believes the issue of deforestation is prejudice against the poor and points to judicial decisions to back up her claim. Rolnick cites several cases where judges have ordered the demolition of favela housing, yet have protected mansions that invade forested areas on the argument that the financial investment made in these expensive buildings cannot be ignored. For example, Rolnick claims that in the space of one week in 2013, two judgments were made, one determining the necessity for removal of favela housing for environmental reasons, and the other determining that residents of two luxury condominiums in Gávea—in undisputed violation of the Forest Code—could remain [93].

The social isolation that already existed at this boundary of the favela has been exasperated by the extensive removal of families, first in order to construct the wall, and subsequently to create the eco-park. Though the project initially received community support and employed the majority of its construction workers from Rocinha, 181 families were consequently relocated in order for the massive PAC-led project to move forward [94]. Lead architect of the park, Café Anderson, rationalizes the removals by emphasizing the high levels of built density and poverty in this neighborhood, which creates elevated health and safety risks for the local population [95].

GMF's involvement in the park began by working with elderly residents, who lived by the entrance to the park, to plant a vertical garden on a stretch of retaining wall measuring 45 meters in length and three meters in height [96]. Each of the 1,000+ bricks in the wall were filled with soil and compost and used as planters for a range of ornamentals, medicinal herbs, fruits, seasonings, succulents, and hanging vines. Residents who lived adjacent to the garden protected and maintained the space until it became self-sustaining. Though the garden has suffered small setbacks from time to time, it has managed to regenerate itself and continues to flourish (Figure 10). UPP troops use this wall as a lookout point, and though having armed troops

patrolling the wall with M16s during the planting process made it a somewhat surreal and uncomfortable process, it did not pose a major disruption to the project.

The next task GMF embarked upon came at the request of Caio, a construction supervisor who owns a mid-rise mixed use building next to one of the park boundaries. Caio's five storey home rises up to overlook the park on one side and São Conrado's impressive oceanfront skyline on the other. The ground floor functions as a rental garage for six to eight vehicles worth R\$ 280 per parking space, and his newly finished top floor boasts a small self-contained studio apartment which fetches R\$ 780 in monthly rental fees. Multi-storey buildings such as Caio's have become more profitable under pacification, catalysing gentrification and stimulating a vertical housing construction boom, despite a 2011 legal decree prohibiting new vertical private construction in the favela [97].

Caio's family live on the residential floors of his building. The master bedroom faces the park and receives little direct sunlight. Its walls are covered in thick black mold, the smell of which hangs heavy in the air and presents the potential threat of tuberculosis. TB is contracted by breathing in bacteria that survive in airborne suspension for several hours in small rooms without fresh air or sunlight. Brazil occupies 17th place within the group of 22 countries that account for 80% of the world's tuberculosis cases. The state of Rio de Janeiro has the highest number of people infected by TB nationally, and Rocinha has the largest number of tuberculosis cases in the state, with the disease effecting 372 people out of every 100,000—eleven times higher than the national average (2015) [98]. Moreover, the *Cobras e Lagartos* neighborhood, where the eco-park is located, has the highest incidents of TB in the favela, and therefore, in Brazil.

In an effort which served to open up the space behind Caio's building, a plan was crafted to establish a fruit and vegetable garden directly opposite the property against the eco-wall (Figure 11). GMF cleared the area and removed a sizeable amount of rubble. The soil was tilled and prepared for planting, but ironically the project stalled when it was discovered that park regulations prohibited the fencing in of the garden. As a consequence, Caio understandably chose not to move forward with the project. To grow an unfenced vegetable garden in an area where there were not enough neighbors to watch over it made the project impractical. Instead the space now grows native shrubs and trees.

At the invitation of the park's lead architect, Café Anderson, GMF then began to develop a large trilateral section of the park. With the same problem of having no residents to directly watch over the space, GMF decided to design the large terraced area as a wild food forest where the public could forage for food—a common practice in favelas. Local residents helped clear the land for GMF to plant a range of fast-growing fruit trees, vegetable vines, and other hardy food types that could survive without maintenance. Groups of children also brought seeds from their favorite fruit trees to plant. Park workers watched over the gardens for a time; however, due to a variety of issues, including restricted ac-

cess, a critical budget shortfall, and the failure of the state to fund park maintenance, they were unable to continue and the park began to fall into isolation and disrepair.

Plans for the park started suffering setbacks as early as November 2012. The mismanagement of construction funds resulted in a 30% cost overrun, and eventually PAC abandoned its work unfinished [99]. In addition by March 2013, the UPP, whose headquarters are located in the park, had begun prohibiting access to a large section of it, including most of its leisure facilities and nature walks.

In July that year, Amarildo de Souza, a 42 year old resident bricklayer, 'disappeared' from UPP headquarters. It was later discovered that de Souza was killed while being interrogated by the UPP. The police allegedly used electric shocks and waterboarding on the victim before suffocating him with a plastic bag. Testimonials by residents claim that de Souza's body was disposed of inside the park. A total of 25 UPP police officers were subsequently arrested and charged with de Souza's torture and the concealment of his corpse. In the months that followed de Souza's disappearance, more than 22 Rocinha residents filed reports of being tortured at the same UPP headquarters in the six months preceding his disappearance [100].



Figure 10. Planting a vertical garden with residents near the entrance to Rocinha's ecopark as UPP officers look on during their patrol.



Figure 11. GMF at work in the ecopark, the 'eco/segregation wall' in the background.

To date, the park remains uncompleted, dangerous, and rarely frequented by residents. A chronically eroded dirt access road makes it difficult and dangerous to transit, a place where pedestrians and motorists alike perceive to be at risk, and where parents are fearful for their children to walk. With a lack of street lighting, and the UPP headquarters where Amarildo was tortured and killed, residents do not feel safe.

Since 2015, citizens groups have periodically attempted to engage the public in using the space and claiming responsibility for its maintenance. However, with many facilities being abandoned without completion, addressing the park's deficits is challenging. In addition, residents remain terrified to walk the path that leads past the UPP. Instead of this wonderful area providing a space for family entertainment, for playing sports, or for enjoying cultural activities, the park has become an ominous threat, and largely useless to the people of Rocinha. Set in stunning nature, with some of the most beautiful views of the city, PAC's Ecological Park of Rocinha should be one of the jewels of the city. However, with so many shortcomings, the space sits desolate, falling apart, and avoided by residents. If nothing else, the ecological park is emblematic of the disturbing and complex reality of state intervention as it moves aggressively forward in Rocinha.

10.4. The Laboriaux

The Laboriaux neighborhood of Rocinha is located above the eco-park and has spectacular views of the city (Figure 12). Approximately 4,000 people live in this historic area, one of the favela's more affluent neighborhoods. The Laboriaux was originally settled in the early 1930s, when land was given away by a local politician who used it to buy votes. A further 80 plots were parceled out by a local real estate company and formally sold. By 1937, however, development had stalled and by the end of the decade formal infrastructure had been abandoned and the neighborhood began taking shape as an informal settlement.

Due to the steepness of the neighborhood, landslides have been a problem in the Laboriaux, but the community remains suspicious of the intentions behind attempts by the city to force their evictions as formal real estate development threatens to advance forcefully in this area. Many residents have already had their homes demolished and been compelled to move. Others, however, have successfully fought relocation and have secured the right to stay in their homes [101].

At the beginning of 2013, GMF was invited to collaborate with the Municipal Secretary of the Environment's *Hortas Cariocas* program to develop a mid-size food garden in the Laboriaux. The project was funded in part by an urban planner from Columbia University who received a Davis Peace Grant to work with GMF on the space. The right to use the land was approved by the State Department of Human Rights and Social Assistance (SEASDH)—the social arm of the UPP at the time.

Though residents of the immediate area had been removed from their homes, and the surrounding buildings slated for demolition, GMF worked enthusiastically with members of the Laboriaux community to terrace the site, prepare to

install water tanks, and ready it for planting. *Hortas Cariocas* provided a stipend to four local workers, who were employed to teach food gardening to students from a nearby public elementary school, where another smaller garden was also being established as part of the same collaboration. The two projects were designed to support one another.

However, in August the same year, Rio's Municipal Secretary of Housing (SMH) bulldozed the garden without any warning and without consulting stakeholders—community representatives, residents, the Municipal Department for the Environment, SEASDH, or GMF. The garden was demolished in order to provide a place for the city to park heavy machinery while continuing to demolish homes and build walls around the perimeter of the favela (Figure 13).

The event demonstrated a critical lack of communication and coordination between municipal government departments, and between state and local government tiers. It was symbolic of a general disregard toward community achievements, demonstrated a serious lack of government oversight, and resulted in a strong multiplier effect. The incident also pointed to several other principal government functions that failed the people, including failure to know and respond appropriately to citizen efforts, failure to protect community assets, failure to promote responsible land stewardship, and failure to provide mechanisms to hold government accountable for the consequences of their actions.

President of Laboriaux Residents' Association, José Ricardo Duarte Ferreira has many complaints about the lack of appropriate government action regarding its urbanization works. He cites that in 2013, Mayor Paes declared that the Laboriaux' steep mountainside slopes would be fortified, and that families at-risk would be relocated. However, the city only contained the slope and demolished at-risk housing in areas that faced wealthy neighborhoods, while the city left other properties at environmental risk as they were. As this demonstrates, the government is in critical need of establishing good practices when it comes to transparency, communication, and legitimacy. Obscuring information, or neglecting to make it accessible internally or to the public, represents a serious obstruction to governance. It also underscores the need for community-validated programs and the capacity to build effective, inclusive support for them.



Figure 12. View from the Laboriaux garden.



Figure 13. Laboriaux garden terraces, prepared for planting (left) and after the SMH moved onto the site (right).

10.5. Macega

Macega is a very poor neighborhood that sits on the upper rim of Rocinha, lodged against the rockface of the Dois Irmãos mountains. Its stunning panoramic views overlook the Atlantic Ocean, the beachfront skyline of São Conrado, and Rocinha's entire thatched favela landscape. Macega is an area of intense spatial and social complexity. The residents of this neighborhood are some of the poorest and most at-risk in Rocinha. The primary source of income for residents comes from burning the plastic coating off wiring scavenged from trash to access the internal copper core. There is an abysmal lack of sanitation—not even the open sewer reaches here. Macega is permanently damp due to its very narrow lanes and alleys that are overshadowed by the mountain and receive little sunlight. The only access the community has to a water supply is through collection from a natural well in the rockface, which runs dry in the summer months and overflows to flood the neighborhood during times of heavy rain. There are no indoor toilets, so residents must openly defecate. Housing ruins, mountains of trash, and mounds of human and animal feces litter the area. Macega's remote location is also known as a stronghold for drug trafficking. People that live here do so because they lack an alternative.

Dozens of homes in this area have been demolished by the municipality under the city's Morar Carioca program, some because of the risk of landslide, others in an attempt to displace traffickers. Despite the destruction of homes, or possibly as a consequence of it, squatters have moved in to reoccupy the area, erecting shanties from the demolished housing debris.

Toward the end of 2012, GMF was invited by SEASDH and the *Hortas Cariocas* program to work in Macega to co-produce a large food garden in a massive space that terraces down the mountainside from the upper edge of the favela (Figure 14). GMF orchestrated a series of large-scale, on-the-ground actions to help clear tons of trash from this severely compromised space. The organization donated tools, seeds, labor, and produced cultural interventions to aesthetically improve the area. The garden has an orchard and several large

vegetable gardens maintained by a local resident. Neighborhood residents forage for jackfruit and acerola berries here. It is common for children to climb trees to collect food in the favelas, but in Macega foraging constitutes a larger part of their diets. There is a high proportion of children living in this area, many of whom are undernourished.

Though the physical area of Macega has the potential to expand into a sizeable and much needed food security project, the neighborhood is acutely compromised and underserved because of its physical isolation and links to drug trafficking. Accessing the space is difficult. It requires a ten to fifteen minute walk either up a steep incline or across the favela through dangerous and winding *becos*. This means it is difficult to bring in materials, take trash out, or even get to the space quickly, easily or safely. The municipality eventually withdrew from the project due to these access issues, and SEASDH due to the heightened security risks the neighborhood posed.

GMF continued its physical presence in Macega for a time, but a combination of factors arrested progress. The UPP police put substantial pressure put on gardeners to reveal information about traffickers in the area, which elevated anxiety for the workers involved. In addition, the lead gardener suffered from mental health problems, which included delusional behavior that presented in the form of violence and intimidation toward women [102]. This produced a situation where two female participants were subject to the threat of violence, harassment, and acts of aggression, which created an unhealthy and potentially dangerous work environment and stifled the ability to develop stable working relationships.

In addition, there is an amplified feeling of state abandonment and a historic legacy of violence, murder and displacement in Macega. Drug trafficking murders in the area still occur with some frequency in the vicinity of the garden. Early in June 2013, a murder occurred in close proximity to the garden, and around the same time an unidentified body part was unearthed in the space. Due to the instability of the area, and the reality that the presence of GMF was potentially generating conflict, a decision was made to eventually end involvement in the area.



Figure 14. GMF volunteers overlooking the *Hortas Cariocas* Macega garden after a long workday.

The garden and orchard still provide food for the local community, however Macega remains critically neglected and underserved. The ADA have resumed control of access to the area at one major entry point. This location is now guarded by heavily armed traffickers. Exchanges of gunfire continue, either due to inter-factional fighting or clashes with the UPP. At this point in time, access to the upper part of Macega, where the garden is located, is now restricted by the Department of Civil Defense.

11. Summary Evaluation: A Landscape of Conflict and Obstacles

What these attempts at cultivating productive space indicate is that a lack of one resource or service can partly be compensated by another, but if a multiplicity are compromised, diverted, or withdrawn, these projects are prone to collapse. State level contributions (or lack thereof) directed toward improving natural, social, and capital resources, all play a crucial role in stabilizing or destabilizing favelas such as Rocinha. Competition for them also generates a source of intra-community conflict. A volatile public security landscape that not only fails to protect citizens, but actually leads to elevations in levels of violence, also hinders the ability of favela communities such as these to stabilize. Inappropriate and mismanaged State interventions, guided by non-participatory policy and top-down planning create insecurity, especially regarding access and rights to land.

Causes of macro-level conflict center around issues of territorial control. Hegemony over space remains at the heart of politics in Rocinha. The drug war, exploited for political interest, is emblematic of this crisis, as is the State's attempts to seize territory in the lead up to the Olympics. In both cases the central goal remains the same, which is to control access to limited resources.

These projects not only illuminate macro-level obstacles, but also provide a framework for understanding the micro-level social interfaces that are at play, and the impact they have on local efforts to make public space productive.

A lack of shared goals, different financial expectations or dependencies, misappropriation of funds, theft, self-esteem issues, identity and status are central themes of micro-level conflict within projects or groups. Unfavorable perceptions of fellow residents, differing power differentials, a general lack of trust—toward other community members, government and third sector outsiders—and internal power plays also contribute to creating a sub-level conflict environment. An inability to decentralize power, the failure to create an equitable exchange between partners, or to overcome personality issues, can lead to bad partnership linkages that can have negative and destructive consequences for all those involved [103].

12. Policy Considerations

Despite the failures of Rio's current policy framework, lessons can still be learned. The State could still offer Rocinha's residents the opportunity to become involved in implementing solutions to the problems they face. Where environmental protection or rehabilitation is the goal, one strategy that might prove useful is the adoption of a co-management system whereby, for example, government agencies, local individuals, NGOs, and the private sector collectively participate in processes that promote community stewardship of land and ecosystem service protection by providing incentives to residents.

Informal sector environmental governance systems have been proven effective in a variety of contexts internationally (in several instances more effective than government undertakings) [104]. Government can contribute to poverty reduction by introducing sources of income generation in the form of individual stipends, organizational grants, tax or service breaks that incentivize stewardship [105] and provide tangible benefits to recipients. Micro-credit or solidarity financing could also be offered to enterprises that engage in sustainable resource use or direct use forms of ER. Some of these frameworks already exist in one form or another in Brazil [106], and could be adapted to favela needs, however the majority are currently geared toward benefiting State interests, rather than the poor, and most still fail to reach those who need support most [107]. Furthermore, attempting to alleviate poverty through rewarding environmental stewardship efforts is a complex undertaking. For example, attaching overly bureaucratized regularization conditions to financial remuneration packages or subsidies may frustrate individual agency and impede the already stressed decision-making apparatus of people and organizations struggling to function in poverty.

One inclusive measure that could be integrated into Rio's urban master plan is the provisioning of spaces for community gardens, urban agriculture, and the protection or expansion of green space in favelas. This would create a scaffolding to grow a semi-autonomous, internally managed favela network where sustainability plays a central role. This long-term view for cultivating multidimensional sustainability [108] is reflective of the kind of integrative policy that Rio so

often promotes but does little to support. The protection or remediation of public urban space can only become sustainable if the coming together of local stakeholders cooperate to develop and implement mutually beneficial community management strategies. This requires municipal-level, critical infrastructure investment, capital infusion, and access to a range of resources from training in natural and cultural resource management to solidarity financing. Several incentives worldwide provide regional policy support for community ecosystem protection and environmental stewardship through initiatives such as scholarships, employment, and financial compensation [109].

By and large, however, Rio's rapid urban intervention policies, rather than alleviating the multiple crises that the city's informal sectors face, have multiplied the vulnerabilities and inequalities that confront the people living in Rocinha and other urban favelas that are subject to the State's interventionist policies. As competition for resources inside favelas becomes increasingly accelerated by government seizures, population increases, climate change, ecosystem services scarcity, an absence of productive public space, and an ever-growing built density—inclusive and multi-dimensional crisis management efforts must be authentically put in place. Yet, while data, visibility, and discourse are building to reveal the extent of these needs, Rio's interventions have failed to take on these problems in any logical or meaningful way. In theory, a socio-environmental strategy such as micro-gardening is a viable concept to realize in Rocinha, but with the chronic lack of social cohesion and stability, and the inadequacies of State intervention, and with vast amounts of state dispensed, federal money disappearing and leaving projects unfinished, this remains far from practically achievable. A number of factors have undermined the ability to deliver any significant social provisioning. These include weak state capacity and lack of transparency among government and corporate entities, failure to prioritize community needs, a lack of vision or support for local environmental restoration efforts, inappropriate government oversight that fails to deliver quality infrastructure, and the general neglect of the needs of the people.

13. Conclusion

This paper aims to illuminate on how institutions such as the economy, the legal system, and the State are currently influencing the struggle between the politics of imposed identity and the politics of self-positioning inside Rocinha. If serious policy and judicial reform were undertaken, Rio could initiate inclusive socio-environmental programs to bring improvements to the lives of favela residents. However, transparency is lacking in several dimensions and reform is unlikely. As things stand, access to useful and relevant information remains obscured; citizens and local stakeholder groups are not consulted or taken seriously; there is little effort on the part of the government to learn from or communicate openly or comprehensively with citizens or citizen groups; and there is a lack of vision to prioritize sustained efforts that add value to public space.

Effective governance enables citizen participation, and citizen participation is a key indicator of effective governance. But good governance requires promoting citizens' rights and enabling two-way communication between citizens and government [110]. Yet, as this research demonstrates, delivering inclusivity and social protection to the informal sector has less to do with policy agenda-setting and implementation than with politics and profit.

This paper reveals the aggravated frustrations that involve cultivating productive green space inside Rio's largest and most densely populated urban favela at a time of great upheaval. It exposes how State intervention is framed through the current policy of pacification, and is associated with territorial control and access to land. As well, it describes some of the reasons why community projects, such as the efforts to establish the gardens described, are so difficult to sustain.

In Rio and elsewhere, pressure is building on the growing need to develop socio-environmental policy that addresses resource inequity, especially in areas of poverty [111]. The inclusive co-production of cared for, green public space is integral to the generation of solution-oriented narratives and texts that can encourage critical thinking around interventions in favelas—about how they are defined and how they impact communities. Images and perceptions of poverty are often narrowly focused on economic prosperity, with little value placed on other forms of wealth. Social practices such as building gardens can challenge this perception. Community mobilization and action can stimulate different views, challenge bias, and cultivate a sense of community ownership that can be seen as fragments of what E.P. Thompson conceptualized as a 'moral economy' [112]. The theory of a moral economy encompasses self-affirming behaviors, attitudes and beliefs of excluded peoples in response to social justice issues that relate to their local environment and economy.

The projects such as the ones discussed in this paper also draw attention to the local, citizen-centered social agreements that are being structured to address the socio-environmental needs of Rocinha residents. They are indicative of a diverse range of coalitions that have the potential to foster capacity building and social protection, even though some may fail. These efforts are suggestive of the types of resistance strategies that occur when local subsistence is threatened or abused by State or market forces [113]. They also point to the reality of how State intervention plays out on the ground, whether it be in the form of formalized service delivery, housing regulation policy, or public security actions—that State intervention is focused on building the capacity of the State, not the informal sector, and any meaningful legitimization of public policy in regards to improvements offered to Rocinha residents has yet to be effectively proved.

Further, it connects how the promise of global capital reward, exaggerated by Rio's investment in transforming itself into a mega-event city, has shaped its urban policy landscape to dramatically affect the city's favelas at this

moment in the 21st century. The speculative lure of return generated by Rio's mega-events not only bites into both the molar dimensions of globalization, but likewise exerts great influence over molecular politics inside favela communities.

It is to be expected that controversy will arise in regard to developing any project in a favela. Working in conflict touches on deeply embedded views and attitudes. It is crucial to have a clear understanding of why and how to take a particular approach within a particular context, and to what ends. It is also essential to consider if there is real benefit to a community, or if there are adequate safety measures in place to be able to work without putting people at risk.

Yet despite the insurmountable challenges, as physical platforms for producing public space, the gardens discussed in this paper do deserve some merit. They provided some food insecurity relief and bolstered nutrition uptake for a handful of beneficiaries. They attracted biodiversity where before there was none. They reduced the presence of trash, improved air quality, and reduced vermin infestations. They were able to catalyze some basic level of network-building and joint collaboration. They brought therapeutic benefits to those involved. And increased community awareness of how desirable public space could be produced, and highlighted the DIY potential of cultivating productive green space. In addition, they provided productive community activity for the unemployed, created knowledge exchange opportunities, promoted intergenerational and cross-cultural interactions, and fostered inclusivity and a culture of collective, community-led management. However, the outcomes were often contradictory, and all in all, implied that any hope of effectively producing citizen-centered green space needs to be given much higher levels of sustained support for it to bring any real benefits to the residents of Rio's urban favelas [114].

To foster a decent quality of life for growing favela populations, and put favelas on a solid and sustainable footing, business subsidies, social investment, and economic incentives must be redirected to reflect resident priorities. This means addressing issues such as land tenure security, solidarity and capacity building, poverty alleviation, stable ecosystem service access, education, sanitation, and so on—rather than focusing on policies that are driven by the politics of development interests and enforced through military occupation and dispossession.

This requires good governance that views multiple dimensions of human security—economic stability, poverty reduction, social development, ecological sustainability, and a living environment free of armed conflict as interconnected

goals. At a local level, this means forming meaningful operational links between formal and informal institutions. On all levels (government, judicial, corporate and civil) this requires eliminating undue influence and corruption and creating a method for independently investigating various forms of misconduct.

The benefits of engaging in environmental restoration activities in Rocinha are attractive, but these activities are unstable and temporary at best. Until government reform is undertaken, and inclusivity prioritized, abandonment, oppression, insecurity and fear will largely determine the way people perceive of institutional intervention. In all likelihood, this will continue to obstruct favela residents from having any high expectations of rights, or looking to the State to alleviate their problems.

Undertaking the difficult task of building a better future for the city's poorer residents is especially complex and difficult in large favelas like Rocinha. Land tenure security, drug trafficking, police brutality, and other issues related to territorialism are all stressors. Therefore it is imperative that the social and moral insolvencies of Rio's current policy approach be confronted. Comprehensive changes that refocus on providing decent socio-economic opportunities for residents and improving their general living conditions are interconnected goals that can be brought closer together by efforts that support citizen-centered sustainability initiatives, build green infrastructure, and cultivate safe social space [115].

The opportunity for favelas to become a model for integrating the ecological, socio-economic, planning and political realms may be incapacitated by the State however insights that point to the linkages between ecology and urban design can still be gleaned. Environmental restoration as an urban design experiment is a platform whereby political, ecological and social outcomes can be analyzed to determine how the power relations between favela communities and State institutions can draw the strands of ecology, planning, and informality together, or push them apart. Acknowledging the role that spatial and social heterogeneity play in both ecological and social functioning of urban favelas is essential to understanding the potential integrating power of community-led ER activities, the socio-ecological patch dynamics of these communities, the value and conflict generated by spatial sub-community mosaics, and the recognition that favelas comprise of a myriad of adaptable socio-political systems in which people respond to, and can affect ecological change.

References and Notes

[1] Within the context of this paper, the word 'community' is used to describe whichever of the 25+ neighborhoods of Rocinha is under discussion. It is also used to refer to any number of smaller residential or mixed use sub-communities that are located within the immediate vicinity of the project that is being referenced.

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[4] State with an uppercase 'S' in this context refers to

- multiple tiers (federal, state and municipal) government agencies acting in official capacity on behalf of institutional goals and interests. It can also be linked to its Marxist roots as articulated by Louis Althusser and co-authors in *Reading Capital* (see in particular the original French edition 1965); and by Antonio Gramsci, whose work in political theory and sociology studies deconstructs how states use cultural institutions to maintain power in capitalist societies.
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Research Article

Rio De Janeiro's Olympic Legacy: Public Security for Whom?

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Submitted: 3 August 2015 | In revised form: 14 July 2016 | Accepted: 21 July 2016 |
Published: 15 August 2016

Abstract: As Rio de Janeiro struggles to hold itself together through the Games of the XXXI Olympiad, its much lauded public security Games plan, including its highly controversial police pacification program—long promoted as one of the cornerstones of Rio's Olympic legacy—descends into a state of near total collapse. This paper takes an intimate look at what is likely the last days of this contentious pacification policy, the part it plays in the wider 'Games Security Plan', and how and why it has been implemented in the lead up to the 2016 Summer Olympics.

Keywords: favela; Olympics; pacification; public security; Rio de Janeiro; social policy

1. Introduction

Even before the World Cup and Olympic bids were secured, the state government of Rio de Janeiro began to recraft its image as a safe and glamorous mega-events wonderland. In order to satisfy the International Olympic Committee, the city focused on overturning the city's reputation for violence—and violent policing—especially inside its urban favelas, made up of a assortment of informal and irregular settlements, occupations of abandoned buildings, and substandard government housing complexes that together weave a loose fabric over Brazil's second largest mega-city. A "Games Security Plan", devised by the state and put into operation by all of Brazil's three government levels (federal, state and municipal)—was launched as one of the greatest legacies of the Olympics [1]. It was implemented in two divisions: the "Public Security Integrated Regions" for the *asfalto* (formal city); and the "Police Pacification Units" (UPP) in the favelas.

Rio's police pacification campaign officially launched in 2008. Since that time, 38 of Rio's 763 favelas have been occupied by a range of Rio's Special Ops troops and

military police including the UPP police, BOPE (Elite Special Operations Battalion troops), Choque (Shock troops), and CORE (Civilian Police Special Resources police). To date, 9,543 UPP officers [2] have been installed in efforts to 'pacify' those favelas in proximity to mega-events venues and tourist areas throughout the city. With one or two exceptions, all UPPs are located in areas crucial to the commodification of the city—that is, the hosting of mega-sporting events, athletes villages, tourist facilities, important traffic and transportation routes, and Games headquarters (Figure 1).

The priority of the UPP is to take control of designated favelas that are informally governed by armed drug gangs and corrupt ex-forces militias. The concept was sold using terms such as 'community policing' and 'sustainable security', and promoted as being concerned with providing human security [3], however pacification relies almost exclusively on traditional military force to achieve the state's geopolitical goals of controlling territory, people, and resources. As a result, the people in Rio's favelas are subjected to many forms of politically engineered violence.



Figure 1. Map of Rio de Janeiro showing pacified favelas in relation to Olympic venues, tourist sites, and major transportation routes.

As a military offensive, pacification serves multiple ends. It utilizes a range of police forces to ensure that many of the goals of the government’s rapid urbanization agenda—Rio’s greater Olympic Legacy—are met. This urbanization agenda theoretically encompasses the social component of pacification, that is, to provide favela residents with the public and social services and infrastructure necessary to elevate their citizenry rights. However, Rio’s pacification has come to be exposed as little more than the military facilitation of David Harvey’s concept of “accumulation by dispossession” [4], justified by the ‘war on drugs’ [5].

From the beginning, the pacification policy has been supported by a heavily funded media campaign. Following the winning of the Olympic bid, Rio’s marketing budget underwent substantial growth. From 2006 to 2009 the municipality’s annual expenditure on advertising, marketing and media increased from R\$100,000 to R\$ 800,000. After Mayor Eduardo Paes took office in 2009, the marketing budget jumped to R\$ 29 million (for 2010), and by 2015 it had reached a staggering R\$127 million [6]. Much of it has been used for the marketing of pacification in relation to the Olympics. However, as the Games draw closer, the appeal of military pacification has worn thin, and the cracks that have always been present in the policy have widened into gaping fissures. The police were responsible for one in five homicides in the city during 2015, and the rates continue to escalate during the final count down to the Olympics. Not even Rio’s marketing campaign, championed by Brazil’s right-wing media conglomerate [7], can keep spinning a positive story.

There are many aspects to pacification, far too great for the scope of this paper to cover [8]. Even within the policing framework of pacification, there are too many moving parts to discuss within this context [9]. Therefore, this paper aims to provide a background understanding of pacification policy in relation to the context of military ‘policing’ and how and why policing tactics have evolved to play out on the ground as the Games draw near [10]. Its intent is to impart a broad

understanding of how pacification policy functions for those living in pacified favelas, and outlines how public security policy and the Games Plan in general, is affecting the city as a whole.

To this end, this paper describes how UPP and other Special Ops forces are operating in favelas, and how other military deployments are being positioned so that they can be deployed more broadly across the city for the Olympics. It discusses what impact these operations are having on favela residents and their right to the city, particularly as it relates to their personal security. In this context, the residents’ right to the city is determined not only by the right to access to public space and resources, but freedom of mobility, and the collective right to be involved in how their favela neighborhoods are being shaped through policing.

2. Scope & Method

This paper begins by providing a brief historical context that lays the groundwork for examining the city’s pacification framework and urbanization-related public security initiatives connected to the 2016 Olympic Games. It then examines how the police are operating on the ground inside the favelas and outlines issues of militarization and police violence and how this ties to Olympic urbanization activities and a political and judicial framework that serves Rio’s elite public officials and large private interest groups. It explores the socio-economic cost of the Olympic fallout, and lastly offers policy considerations for understanding the difficulties in limiting Rio’s political landscape of corruption and violence.

The information has been derived from qualitative fieldwork conducted by the author in five of Rio’s north and south zone favelas and favela complexes between the years 2010 and 2016. It tries to describe key dimensions that have impacted on pacification policing policy and procedures undertaken to effect public security conditions inside favelas. These conditions are subject to rapidly-evolving sets of precarious and fragile policy variables that render it impossible to measure the real-time impact of public security policy as it plays out in the lives of everyday people during the Olympic Games. Its aim is, therefore, to provide a general overview of how pacification operates, how it is linked to urbanization activities, how residents are being affected within the pacification scenario, and how the city has been affected by the Olympics, and the policing and criminal justice policies that surround it.

The author has used a mixed methodology approach based on multi-year qualitative research that has been cross-analyzed against a range of empirical data. Qualitative information was derived from direct observations, conversations with favela residents, meetings with citizens’ committees and Residents’ Associations, interactions with drug traffickers, UPP officers, government urbanization workers, and municipal stakeholders. Empirical research has included an examination of articles of law, statistical data [11], municipal and state development plans, architectural

design documents, human rights reports, and mainstream and independent media reportage. Participation in conferences, meetings, and reviews of literature produced by other researchers [5] engaged in analyses of Rio's mega-events and urbanization activities also provide a foundation with which to check and balance the paper.

3. Historic Backdrop

Rio's favelas began to develop toward the end of the nineteenth century as the country abolished slavery and transformed from a Portuguese empire into a Republic. As informal settlements grew, urbanized, and became more heavily populated, residents organized internally to form associations and create the basic infrastructure that the government had failed to extend to their communities, such as channels for sewerage, transportation systems, roads, informal real estate title exchanges, and commercial enterprises. State [12] abandonment, sporadic government-led military police incursions, forced population removals, and the slow takeover of territory by drug trafficking gangs, however, has progressively limited residents' access to public security, spatial mobility, social infrastructure, and earning capacity beyond any kind of subsistence existence [13].

Rio has always been characterized by a great divide between wealth and poverty, and in recent years the income gap has begun to increase even more, making it one of the most unequal cities in the country [14]. The favelas are estimated to house more than 1.4 million people, or 27% of the city's population [15]. 20.7% of the city live in households with a per capita income of less than half the minimum wage, roughly equivalent to US\$ 6 a day [1]. Existing on half of that, 9.2% of the population survives on less than a quarter of the Brazilian minimum wage—earning just US\$ 3 a day. In pacified favelas, the poverty rate is even higher—with a third of the population (34.5%) earning less than US\$ 6 per day, and almost 1 in 8 households (12.8%) existing on less than US\$ 3 per capita a day [14]. In general, the opportunity to earn a living wage is low at best, and out of reach for the overwhelming majority.

The 1980s brought new power bases, struggles, and economic opportunity to Rio through the US-led 'war on drugs'. The city was transformed into a principal point for the international transit of cocaine and a large domestic market in itself, and the favelas—where State presence was never well established—became ideal territories from which drug trafficking gangs could operate. Over time, the scaling-up of the drug trade (that before had been limited to local residents dealing small quantities of home-grown marijuana) to traffic large quantities of cocaine, gradually resulted in absolute gang control over many of the city's favelas.

As cocaine replaced marijuana at the *bocas* (drug sales points), drug networks and power relations began to change. A new generation of heavily armed young foot soldiers governed by "micro-level warlords" [16] created a system of governance whereby teenage boys patrolled the streets with everything from AK-47s to Goliath rocket launchers. These youths bear resemblance to child soldiers in that they

operate within armed factions with military-grade weapons inside a command structure that controls territory, people, and resources [17]. However, they are also interwoven into the fabric of the favelas through familial ties.

The dangers presented by gang culture, as well as turf battles between any combination of gangs, police, and militias (gangs of corrupt police and prison guards who operate as guns-for-hire), have continued to place residents in the crosshairs of armed conflict. These conflicts closely resemble other global security situations that are formally defined by International Humanitarian Law as 'non-international internal armed conflicts' [18] that, at times (and especially at this current moment) bear a notable resemblance to war zones [1,19]. In the favelas, the impact of these conflicts is strikingly evident. Almost one in five people have had a family member fall victim to homicide, and levels of youth homicide are estimated to be seven times that of the rest of the city [88].

The drug trade has clearly destroyed autonomous agency and brought much harm to the favelas. However, the State's institutionalized culture of extreme police brutality has also taken a heavy toll on favela residents. Rio's many notorious police forces have consistently been criticized for their blatant disregard of human rights. Following the formation of BOPE in the early 1990s, conflict between the drug gangs and the police rapidly escalated. BOPE troops were incentivized by policies such as the 'Wild West gratuity', implemented from 1995–1998, which increased a police officer's monthly salary according to how many 'criminals' an officer killed. The policy was credited with a drastic spike in the number of extra-judicial killings at the hands of the police during this era, a trend that increased over the years to reach its height in 2007 when there were a recorded 1,330 killings across the city at the hands of Rio's police forces.

At this time, the federal government launched the National Program for Public Security and Citizenship (Pronasci) to tackle the country's public security problems in preparation for a series of mega-sporting events, including the Pan American Games (2007), the FIFA World Cup (2014) and the Olympics (2016). Rio de Janeiro was prioritized as a funding recipient to receive a large portion of the US\$ 2.12 billion pledged to be invested over a five year period in collaborative actions coordinated by states and municipalities [1,21]. The program aimed to carry out a set of interdisciplinary joint crime prevention operations which were to be designed with the "participation [of] the community" through programs "aimed at improving public safety" [22]. Thus, the military pacification campaign was born.

The Pronasci funds allocated to finance the UPP were dramatically strengthened by the government's largest private sector partner, the EBX Group, owned by businessman Eike Batista, who between 2011 and 2013 invested R\$ 20 million per year (more than US\$ 25 million in total) in UPP security equipment, vehicles and technologies [2]. Batista's financing of the UPP program was almost five times higher than the government funding allocated to the military pacification units. By the end of 2013, however, both EBX and Batista's oil conglomerate OGX [23] had filed for bankruptcy [24], and Batista had become the

target of a federal investigation by Brazilian regulators. Batista's withdrawal from the UPP partnership in 2013, the phasing out of Pronasci funding around the same time, and Brazil's deteriorating economy, has collectively dealt the campaign a huge financial blow [25]. Yet despite the mounting economic challenges, the campaign—for the time being—continues to hold.

4. The UPP Framework

The legal existence of the UPP is based on a very lean regulatory framework consisting of just a few decrees [26]. The criteria for selecting locations for pacification, as laid out in legal text, are poor communities with a low institutional presence and a high degree of informality, and where armed criminal groups affront State democratic law. The three main objectives of the UPP are:

- a) to consolidate state control over communities under strong influence of openly armed crime;
- b) to return local people to a state of peace and public tranquility that is necessary for the exercise of full citizenship, and that guarantees development in both social and economic terms; and
- c) to apply timely, effective and plural instruments—with emphasis on mediation—to resolve events related to conflict [26].

Corresponding social objectives, some of which are outlined in law, and others which have been publically stated, include the installation of public services; the expansion of the private sector; the regularization of land holdings; rapid urbanization and the growth of economic development activity; and the integration of pacified territories and their inhabitants into the formal city. There are also objectives that are deliberately avoided. These include a) ending drug trafficking; and b) winning the war against crime [27].

With the UPP focused on retaking territory, the State's narrative has changed from ending drug trafficking to the disarmament of traffickers [28]. Thus, even though the UPP has been promoted in connection with the 'war on drugs,' it has shifted the public security debate to distinguish its mission as a territorial issue, rather than one of eradicating the city's drug-trafficking economy [29].

The pacification process has followed four basic sequential steps:

- a) Tactical intervention—initiated by Special Operations military squads (BOPE and Shock Troops)—to establish territorial control;
- b) Stabilization—through Special Ops siege actions;
- c) Installation of specially assigned UPP troops;
- d) Evaluation and monitoring by the Rio+Social program [1], which occurs after 'stabilization' has been achieved [26].

Military pacification occurs through a massive coordinated military invasion of the favela—by BOPE, Choque, CORE, and a range of armed forces and other police divisions. This is followed by a BOPE occupation of the favela, which after a time transitions from control to UPP units, with Special Ops troops continuing to patrol and assist in operations when required (Figure 2).



Figure 2. UPP patrol, Manguinhos favela, 2013.

The pacification process is normally accompanied by *Choque de Ordems* (Shock Orders) that shut down various forms of informality [30]—by relocating or removing residents; by closing unlicensed businesses; by outlawing particular forms of cultural events such as *baile funks* (funk dance parties); and by imposing curfews. These orders are enforced by Special Ops troops and UPP officers who, until March 2016, continued to benefit from a modified version of the Wild West policy, which has been reinvented, amended and applied under a different name [31]. Up until this time, UPP officers received financial compensation of up to R\$ 9,000 (US\$ 2,830) annually if they met their 'crime reduction targets' in the favelas [32]. This increase augmented an officer's salary by as much as an additional 80%. Approximately R\$ 200 million (US\$ 63 million) of the R\$ 1.8 billion (US\$ 0.57 billion) invested by the municipality in pacification since 2008 was specifically spent on salary bonuses for UPP police who met their target goals [33]. In April 2013 alone, almost 12,000 of Rio's police officers and public servants received financial bonuses for meeting their target goals [34].

Yet, the low base wages that Rio's PM officers earn—R\$ 906 a month (2014), or approximately US\$ 250—have posed a critical problem in relation to corruption [35,36] and made police an easy mark for traffickers. Many have been accused of supplementing their incomes by working with gangs to supply illegal weapons, to run drugs, or to provide protection [13]. Frequently referred to as state-sponsored killing, murder or death squads, pacification troops are estimated to take seven years off the average life expectancy of residents in Rio's favelas [37].

5. A Landscape of Aggression

According to the official narrative, the process of pacification brings peace and freedom to the residents of favelas [38]. Yet the police are regularly charged with taking bribes from traffickers [39], of bribing witnesses [40], and of other forms of extortion [41] and corruption [42]. Moreover, they are charged with high levels of ongoing human rights violations, including

rape, murder, torture, and ill-treatment of detainees [34].

Those who are poor, young, and of African-Brazilian descent are particularly vulnerable to falling victim to lethal violence perpetrated by police, organized crime, or death squads. A UN Committee on the Rights of the Child report issued in 2015, voiced alarm at the lethal violence carried out by the Military Police, the UPP, and BOPE against children in favelas during Shock Order operations aimed at cleansing the city in relation to mega-events, including the Olympics [43].

The UN Committee is deeply disturbed not only by the extraordinarily high number of extra-judicial executions of children by military police, militias, and civilian police, but by a range of other violations of children's rights. These violations include torture and disappearances of children during military and other operations by security forces, particularly in favelas; physical violence against children, including the disproportionate use of tear gas and pepper spray during forced evictions for urban infrastructure projects and/or the construction of mega-event venues for sporting events; the arbitrary arrests of children on the basis of combating organized crime; physical violence in police cars; the denial of access to legal assistance and medical care; physical violence during body searching; and sexual harassment of girls during pacification operations [43].

A 2016 study commissioned by the committee and conducted by sociologist Julio Waiselfisz claims Brazil ranks 3rd place for child homicides (out of 85 countries analyzed). In other words, 29 children per day are murdered in Brazil (2013) [44]. Alarming, a 2010–2012 study by Waiselfisz also reveals that, on average, youth murders by firearms are 285% higher than for the rest of the population, meaning that for every four children or teenagers killed by gun violence, only one person from the rest of the population died the same way [45].

There is also widespread judicial impunity afforded to the police for their actions. The state prosecutor's office dismisses 99.2% of incidences of death involving police—even when evidence directly contradicts the police version of events, points to the use of excessive force, or is a clear cut case of unlawful killing [46]. This makes clear why people living in Rio's favelas are more scared of the police than they are of either militias or drug trafficking gangs [47].

Another troubling statistic reveals that during Sérgio Cabral's reign as Rio's governor (2006-2014), nearly 40,000 people were documented as disappeared or missing (a rise of 32%) [48]. This figure correlates to the drop in homicide rates during the same time period. And though homicide rates fell in favelas during the initial years of pacification [27,49], between 2006–2011 the number of violent non-lethal incidents soared—from 29.4 to 99 per 100,000 inhabitants. By 2014, reported incidences of rape and domestic violence (previously outlawed under gang rule [50]) had tripled under the UPP [27,51].

Outside of the favelas, the story of rising crime was much the same. Between 2012 and 2013, pedestrian robberies surged more than 32%, vehicle thefts rose 46.7%, assaults on buses jumped 118.4%, and cargo theft soared by 175.6% [52]. By the end of 2014, muggings (which have been steadily increasing over the last

decade) were up by more than 42% [53].

Since 2012, lethal violence has also risen substantially. The city's homicide rate in Rio's poorer North Zone in neighborhoods such as Baixada Fluminense rose by 28% between January 2012 and September 2013. In the nearby commuter city of Niterói, homicides rose by 27% due to criminal gangs relocating after being forced out of pacified favelas [54]. The number of people killed by Rio security forces between 2013 and 2014 spiked by 40% [55], there was a 69% increase in extra-judicial resistance killings by police throughout the state, and a 77% increase in the city. Overall, homicides in Rio were up more than 18% statewide for January 2014 [52] (compared to the previous year), with a 4.3% rise in the city itself [56]. From January through October 2014, 481 people were killed by the military police in Rio, a hundred more than during the same period for 2013 [46]. And between 2013 and 2015, homicides resulting from police intervention in the state of Rio de Janeiro increased by 54%. To put it a different way, on an annual basis, the police in Rio have been killing about the same amount of people as do the entire police forces of the United States [57]. Most are poor, between the ages of 15 and 29, and black. Nationwide, 77% of all homicide victims fall into this demographic [58].

In addition, pacification has dramatically increased the number of favelas in which criminal militias operate in—from six in 2004 to 148 in 2014. Militias have now spread beyond the city to control 195 communities in 23 of the 90 municipalities throughout the state [59]. In January 2015, armed confrontations between militias and traffickers accounted for 80% of the 130 homicides that took place in Baixada Fluminense [60].

Stray bullets also present a growing problem (Figure 3). There were 111 people hit by stray bullets in Rio in 2013. And in the first month of 2015, stray bullets injured 32 people [61] and caused five deaths throughout the metropolitan area, including those of women, young children, and adolescents [62]. A 2014 UN paper based on 2009–2013 statistics revealed that Brazil has the second highest number of stray bullet incidents in Latin America (behind Venezuela) [63]. Rio's Security Secretary José Beltrame has attributed the majority of stray bullet shootings to "bandits' attachment to guns" [62] though anthropologist and former BOPE officer Paulo Storani, claims that it is more likely that a large portion of the stray bullet problem is attributable to the pacification's displacement of drug traffickers [64] to unpacified areas. This leads to attempted territorial takeovers of these areas which are governed by rival gangs.

By 2016, the security situation in Rio's favelas had started to spiral out of control. According to Amnesty International (AI), during the first quarter of 2016, homicides resulting from police interventions in the city of Rio de Janeiro increased by 10% compared to the same period in 2015, by mid-2016 lethal police violence had increased by almost 80%. In the first three weeks of April alone, at least eleven of the city's favela residents died in this manner [65]. By the end of the month, the number had reached 78 statewide [66]. And civilians are not the only casualties. In the first six months of 2016, 71 UPP officers were shot in pacified favelas, thirteen fatally (Figure 4) [67].



Figure 3. Spent shell casings collected from the ground after a police shooting in the Mangueiros favela, 2015.



Figure 4. UPP unit headquarters in Mangueiros, fortified with cement barricades.

Having heavily armed and violent drug gangs govern inner-city neighborhoods is clearly an untenable security situation, and no doubt some benefits have come from public security interventions under the UPP. However, the single most positive claim associated with life under UPP was that residents would be more able to walk around the favelas more freely without being subject to armed violence [1]. Yet, social gathering spaces, whether indoors (for example, cultural venues including children's theaters) or outdoors (for example, community gardens, parks or football fields) have become indiscriminate shooting galleries for police. People are not even safe from being shot while having lunch inside their homes. Military operations have shut down schools, kindergartens, health clinics, businesses, and access to favelas. Being involved in protests against the tens of thousands of forced evictions that have preceded the Games also presents a risk to personal safety. A large majority of residents now feel unable to move around their neighborhoods without fear of being shot by police [68].

6. The Violence of the Games and the Judicial Framework That Supports It

Since the announcement of the Olympics in 2009 through to mid-2016, 2,500 people have been killed by police in Rio [69]. Ask a mother in a favela how many children she has,

and she's likely to answer, "I have X number of children, Y are still living". Although the escalation in police killings cannot be directly linked to the Olympic preparations, these numbers do connect Rio's public security forces to an escalation in the use of excessive violent force ahead of the Games. AI fears that "the risk of increased [rights] violations committed directly as a result of hosting the Olympic Games is great" and that these violations may occur without appropriate investigation or prosecution, as has been the case in the past [70], especially during mega-events such as the World Cup, when police killed 580 people in the state of Rio de Janeiro, a 40% increase than in the previous year. The number in 2015 was even greater—645 dead, most uninvestigated [71].

Due to Brazil's economic free fall, Rio's State Security Secretary Beltrame, announced at the end of the first quarter of 2016 that Rio's R\$ 7 billion state security budget was to be cut by about 35% for the year (a reduction of R\$ 18 billion)—effective immediately [68]. As a result, the Games plan to utilize approximately 65,000 police and 20,000 military troops for Olympic security (the largest security operation in Brazil's history) [72] has been thrown into disarray. The public security forces that were to be commandeered from other states—now also in crisis—have been significantly reduced [73] because of the strain on state coffers, some of which have fallen to as low as US\$ 10,000 [74]. Adding to the crisis, several of Rio's state civil police divisions' salaries have been withheld since March due to a lack of available funds [75]. For the moment, UPP salaries are being continued through a special funding donation from Rio's State Legislative Assembly (Alerj), however the UPP crime reduction target bonuses have been discontinued [76]. These laws are also expected to contribute to the risk of rights violations.

In an effort to stem ongoing public discontent around these issues, an array of bills and laws have been introduced to crack down on almost any form of freedom of public expression, especially around mega-events [7]. In 2013, just months ahead of the World Cup, the Ministry of Defense issued the Guarantee of Law and Order (GLO) [77]—a set of guidelines allowing wider discretionary use of the military for law and order operations and to quash public protests without transparency or accountability monitoring mechanisms. The decree outlined an "operational plan" for "disorder control in the urban environment", and included any social movement or opposition to "undermine public order". The GLO also aimed to craft the "flow of information to the general public, especially the media" [7].

The approval of yet another federal Anti-Terrorism Act (Law Project 2016/2015), passed this time just months before the Olympics, further criminalized the already strict legal lockdown on exercising the right of freedom of assembly. The law defines terrorism as the practice, by one or more people, of sabotage, violence, or potentially violent acts, "when committed with the goal of causing social or generalized terror, or exposing people, public patrimony or authority to danger" [78]. The deliberately vague language used to define terrorism allows for any form of social protest

to be punished with up to a 30-year prison term. The Act is expected to result in a further increase in unchecked police violence during the Olympics, especially those that occur in the favelas. Rafael Custódio, coordinator of Justiça da Conectas, states that on the eve of the Games, the government “approved the Project on an emergency basis, without any discussion with society, [as] an instrument to criminalize collective protests movements”. Moreover, he claims that “the legacy of the Olympics for Brazil will be the weakening of [its] democracy” [79].

Going even further, in May, the Federal Government signed the “General Law of the Olympics” [80] to impose heavier restrictions upon the rights to freedom of peaceful assembly in Rio. Essentially the new GLO is an even more repressive reissue of the General Law of the World Cup. Al calls it a failure by Brazilian authorities “to deliver the promised Olympic legacy of a safe country for all [or] to ensure that law enforcement officials meet international law and standards on the use of force and firearms” [81]. Pacification is part of this framework. They are the enforcers for what social researchers Brito and Oliveira call “the transformation of Rio de Janeiro into a large tropical theme park” [82].

Military police are on the frontlines of the violent and forced evictions that have driven at least 67,000 favela residents from their homes [83] all over the city to make way for Olympic facilities, transit routes, and tourist sites. The police execution of Shock Orders, which shut down informal businesses [84], typically follow, further undermining the already low chances that the city’s poorer residents have of achieving socio-economic stability [85]. None of this comes as a surprise. As David Zirin has made clear, “so much of the Olympics historically has been about displacement and the repossession of land for the wealthy at the expense of the poor” [86].

José Roberto Bassul asserts that in Brazil, State resources and investments have always benefited the private sector by adopting urban planning regulations that privilege Brazil’s real estate and construction sector giants, and moreover, that urbanism has long been characterized by the private appropriation of public investments and the segregation of large population groups who are excluded from access to essential services, and who reside in favelas and substandard government housing complexes. Thus, the social struggles for the right to the city have traditionally been linked to structural urban reform [87], and the military police have systematically been used as the primary means by which the public’s freedom of expression, and people’s right to life, have been suppressed.

7. Into Debt: The Calamitous Fall of the Olympic City

Numerous urban reform projects have gutted the city’s poorest neighborhoods in service of the Olympics. James Freeman discusses these at length in his paper “Neoliberal Accumulation Strategies and the visible hand of Police Pacification in Rio de Janeiro” (2012). Freeman links police pacification to the violence of Rio’s entrepreneurial activities centered around developing the city as a mega-events

venue—a strategy which he sees as a clear cut case of accumulation by dispossession. He describes it as the state engineering of “military conquest and control of territories, and the capture of assets by force to create outlets for the expansion of private capital” [89]. Rio’s mega-events have caused so much civil unrest due to these processes, at enormous public cost, that they haven’t even been able to provide the ‘feel good factor’ of civic pride that normally accompanies them [90].

It has been estimated that the Olympics may cost Brazil as much as 0.7% of its GDP. The US\$ 11.1 billion in estimated costs (including more than a US\$ 1 billion in security) may eventually reach as much as US\$ 16 billion. For Brazil as a whole, the economic returns are dismal. The event is expected to result in overall gains of less than 0.2% of GDP, and no more than 12,000 in employment opportunities. The IOC, which owns the majority of broadcasting rights for the Games, is the largest revenue earner, accounting for almost 50% of total profit from the event.

As was the experience with the 2014 World Cup, the Olympics have turned out to be much costlier than anticipated. Massive cost overruns for ‘Olympic legacy projects’ include exorbitant infrastructure spending, more-expensive-than-envisaged sports venues, and cumbersome security logistics. In June, the IOC had to advance partial payment of the US\$ 1,045 billion due in August to stave off Rio’s cash deficit. A cash shortfall of R\$ 19 billion in Rio’s state accounts has resulted in indefinite delays in pension payments to retirees; thousands of government employee salaries being withheld, including those of police, teachers and hospital workers; 70 schools being ‘occupied’ by students; the State University on strike; and dozens of emergency health units and hospitals being closed because of a lack of medicines and equipment.

The budget shortfall is in large part due to a dip in the collection of VAT and oil royalties. According to the State Court of Auditors, Rio granted R\$ 138 billion in tax relief between 2008 and 2013, much of which went to the private construction and real estate development giants that received the Olympic contracts. This led to the state’s tax exemptions exceeding the amount of taxes collected. As a result, in June, just seven weeks before the Games, Rio’s acting Governor Francisco Dornelles declared a “state of public calamity”, pleading for emergency funds in order for the state to “honor commitments to the Olympics”. This paved the way for Brazil’s Interim President Michel Temer to inject R\$ 2.9 billion in emergency funds into Rio for use in expenses relating to the public safety of the Games. Sources at the Rio Olympic Committee have confided that R\$ 1 billion will be spent just on the opening ceremony. State Representative Marcelo Freixo calls the decree “un-constitutional” [91].

The city’s Olympic facilities contracts were bid on by only one consortium—the Rio Mais syndicate—which consists of Latin America’s largest construction and engineering giant, Odebrecht [92] (whose former CEO is serving a nineteen year prison sentence for corruption [93]); Andrade Gutierrez [94] (which in May 2016 reached a US\$ 286 million settlement in

a plea deal with federal prosecutors for its alleged role in a massive corruption scandal involving oil company Petrobras); and real estate titan Carvalho Hosken (which was recently forgiven a municipal tax debt of R\$ 7.6 million [95,96]).

The consortium was gifted the land to develop the Olympic Park and will redevelop the site into luxury condos after the Games. In addition to tax breaks, the city also paid the consortium R\$ 462 million for the Olympic development work, and contributed another R\$ 8 billion in infrastructure to the area to enable the condo development. Furthermore, thanks to Rio's 'exceptionality laws', devised specifically to fast-track Olympic development without public debate, the consortium has also been able to bypass a range of building codes and zoning restrictions. In turn, Odebrecht and real estate property tycoon Carlos Carvalho have made enormous campaign contributions to both the former Governor's and the Mayor's political war chests [97].

Documents uncovered in March 2016 allegedly show that Odebrecht executives are connected to R\$ 1 million in suspected bribes that link to two Olympic legacy projects [98]. As a result, in May 2016, federal prosecutors announced an investigation of the city's Olympic legacy construction projects (it is the city government that oversees most Olympic construction projects). The investigations include a probe into the federal funds earmarked to build a series of sewerage treatment plants to clean up Rio's chronically polluted Guanabara Bay (a project which never transpired); an examination of the five construction firms that are responsible for building most of the R\$ 39 billion in Olympic venues; the use of R\$ 1.76 billion in federal funding for 'legacy' infrastructure; the R\$ 8 billion renovation of Rio's Porto Maravilha tourist area; and the expansion of the city's metro line connecting the main Olympic arena in Barra de Tijuca (another unfinished project with a 50% cost overrun). Most of these projects have violently forced the relocation of hundreds of low-income families, yet as Chris Gaffney commented to Dave Zirin in a recent article published by *The Nation*, "The Construction Industrial Complex of Brazil is similar to the Military Industrial Complex of the USA" [99]. As such, it is likely to weather any corruption probe. Even if the investigation directly links to misconduct involving elected officials, it is certain that its scope will not go so far as to include malfeasance by police [100].

Brazil's Construction Industrial Complex may be reaping in Olympic profits, but the country itself is suffering badly. Brazil's national budget deficit is expected to reach 12% of GDP for 2016, and its gross debt-to-GDP ratio (currently running at 70%) may rise to an incredible 85%. On a state level, Rio has already defaulted on two payments of external debt obligations to ADP (a French development bank) and the Inter-American Development Bank. The state's overall debt has reached 225% of net current revenues, to breach the 200% ceiling stipulated by Senate Resolution #40 (2001). As of April 2016, the state's deficit was amongst the highest in Brazil [101].

The city is not faring any better with the second highest debt ratio in the country. Mayor Paes claims he is confident the city can manage it, given the Fiscal Responsibility

Act, which offers a debt ceiling of up to 120% of revenue (currently it is at 30%). However, in the last three years city revenues have decreased and unemployment and inflation are on the rise. In addition, immediately following the Olympics almost 30,000 construction workers will be out of jobs, and that is just one employment sector. Furthermore, repayments on the municipality's US\$1,045 billion World Bank loan (for urbanization and development) begin in 2017 [102]. Rio's financial collapse has strained a range of critical public services, including public security. Police helicopters have been grounded, patrol cars are without gasoline, police salaries are being withheld, and incident reports can't be written because there is no paper to print them on, or printers left with ink. And there are a lot of incidents to report in the formal city, where street robberies have risen to an 11-year high [103]. Many police units are relying solely on donations of stationery, cleaning supplies, and toilet paper to remain functioning at all. At a civil police protest held at Rio's Galeão airport at the end of June, disgruntled officers greeted international arrivals with a banner that read "Welcome to Hell. Police and firefighters don't get paid—whoever comes to Rio de Janeiro will not be safe" [74]. The following day, mutilated body parts washed up on the beach in Copacabana near to the Olympic volleyball pavilion. The police continue to occupy Terminal 2 at Galeão and to march in protest along the main avenue leading to and from the airport.

The federal government, under Interim president Michel Temer, claims there is "a solid security program" in place for the Olympics. Soldiers, helicopters and naval vessels have been federally deployed to bolster security operations for the event (Figure 5), but state authorities continue to delay civil police salaries and scale back pacification ambitions. As the crisis deepens, publically aired discontent between city and state leaders about how public security is being mismanaged continues to grow [103]. In a city of 12 million people where armed muggings, stray bullets, fatal car-jackings, and favela wars are escalating, and public servants no longer being paid, there is public anger at the R\$ 2.9 billion emergency funds that have been redirected away from critical needs to service the Olympics, especially at a time when the Chief of Civil Police, Fernando Veloso, admits he "can't discard the possibility of a [security] collapse" because police are "at the limit of [their] operational capacity" [74].



Figure 5. Troops stationed in Copacabana for the Olympics.

8. The Inter/National Security Framework

Brazil's federal interim government have orchestrated a series of international security actions that are coordinated through the Centre for International Police Cooperation (CCPI) as part of an 'integrated system of command and control'. The operations are implemented by the Ministry of Justice and Citizenship's Special Secretariat of Security for Major Events (Sesge). The CCPI and the Anti-terrorism Integrated Center (CIANT) is cooperating with Interpol, Europol, Ameripol, and 250 police representatives from 55 countries to provide Olympic security [104]. The efforts are led by federal police and headquartered in two command and control centers in Rio de Janeiro and Brasilia. They are fashioned after the FIFA Confederation (2013) and World Cup (2014) security operations which led to massive violations of human rights perpetrated by police [7]. The largest police operations focus on deploying integrated mobile teams of federal police and military units to secure areas in and around competition venues, many of them inside the favelas [105]. It is the largest international police cooperation action in the history of both Brazil and Interpol.

The vague language of 'terrorism' as it appears in the legislation that supports these operations, suggests the military deployments will be focused on amplifying operations in the favelas and to crack down on public protests. Despite the range of security assurances offered, and the thousands of troops deployed, the security situation has continued to be plagued with problems. Weeks before the Olympics some security contracts for basic safety equipment had yet to be awarded. In April, Col. Moreira, commander of one of the key Olympic security forces—the National Force for Public Security—resigned his post without explanation [106]. Two weeks before the start of the Games, National Security Force troops charged with securing the main Olympic venue threatened to abandon their posts due to the poor conditions they have had to endure—living in government housing blocks with a lack of water, clogged sinks, leaking sewerage, without bathrooms, showers, or bed rooms, being fed rotten food in a neighborhood surrounded by favelas dominated by militias and traffickers [107].

9. A Legacy of Corruption and Insecurity

Corruption, violence, and insecurity have always been pervasive in Brazil. The police's right to use violence, as sanctioned by the judiciary, in order to protect State interests is representative of just one aspect of this. The ongoing violence around the Olympic developments is only the most recent manifestation of political elites protecting their connections to private business interests.

In Rio, the police and the courts are the public institutions most directly involved in determining the seizure, control, and distribution of property rights. The Police—as the State's enforcing institution—has the strongest influence on determining the de facto ownership status over property. This is most obviously demonstrated in the questionable

legality of Rio's seizure of favela territory and the mass evictions and 'social cleansing' operations that have ensued. Control over land has had a direct impact on shaping police actions in relation to these land grabs. The violence with which they have occurred has undermined any informal (yet legitimate) property rights of the poor, without neutralizing the ongoing threat posed by the criminal actions of gangs.

The link between violence, economic inequality, political corruption and economic growth is a key and persistent theme across the city and state [108], with the police playing a pivotal role in the institutional nexus of the urbanization/development paradigm. In the favelas, police do not even have to claim that their victims are armed for them to justify extrajudicial killings. Due to inconsistencies in the public's and the police's reporting of crime, it is impossible to quantify the full impact of police activities inside these communities in terms of human and social cost. However, it can be said that the state's semi-legal seizure and violent control of favela property for the Olympics has been a key determinant in generating enormous private, short-term economic profit from the city's urbanization and development agenda.

Violence occurs in Brazil to such a degree that it has become a societal norm. To put it in context, between 2004 and 2007, there were 23,000 more deaths by homicide in Brazil than deaths occurring through armed conflicts in Iraq, Sudan, Afghanistan, Columbia, the Democratic Republic of Congo, Sri Lanka, India, Somalia, Nepal, Pakistan, India, and the Israel/Palestinian territories combined [45]. Though homicide rates in Rio's favelas dropped between 2007 and 2012, they are again rising at an alarming rate. In Rio, one out of five homicides are attributable to police. The majority of those killed are poor, black youths living in favelas [65]. Sharp spikes in extra-judicial killings and rights violations perpetrated by police transpire exponentially during mega-events, and occur with impunity.

In economic terms, police violence costs the country the approximate equivalent of 1.2% of the country's GDP annually [109]. Security costs due to mega-events increase this number substantially. Despite years of political rhetoric that has espoused Rio's pacification campaign as a cornerstone of Rio's Olympic legacy, and a promoter of sustainable economic growth, citizen participation, and good governance [14], it is clear that neither it, nor Rio's public security Games Plan in general, has done much to provide public security for the city.

Rather, Rio's militarism is part of a wider framework of 'structural violence' that produces suffering—both directly through acts of violence, torture, and murder, and indirectly through an institutionalized political social pathology that results in dispossession, lack, and insecurity. Paul Farmer stresses these "offensives against human dignity" (2003: 8) are disproportionately perpetrated against the poor (2003: 50) and link to other invisible forms of structural violence that are produced by transnational political-economic processes (2003: 18) [110]—such as the Olympics. The interrelated profit-making goals of the economic elite, government, and

the IOC, directly connect Rio's militarized violence to the flow of global capital. That is, the processes of exploitation and human rights abuses the police are enforcing on the ground are historically, institutionally and economically driven by the State, but attached to a privileged handful of government-backed private stakeholders that have been able to profit in the billions from Olympic development opportunities. It is a politico-economic arrangement crafted through a coalition of laws, policies, privatization, and policing, designed to maximize profiting-making. It amounts to what Mike Davis describes as "a form of low-intensity warfare" [111].

Police in Rio are accredited as being responsible for more than 5,000 civilians deaths in the years since the announcement of the winning the Olympic Games bid, accounting for 16% of homicides overall during this period. Those killed by police in revenge killings and summary executions include children as young as ten years old. Social media posts by police proudly boast that police "go into the favelas to kill" [7]. UPP and Special Ops troops run through the favelas daily with assault rifles drawn, pointed, and ready to fire. As an outsider working in favelas, I have experienced this myself many times. And it is terrifying. It is difficult to blame the police, who, from their perspective, could be shot at any time. It is the policy that is fundamentally flawed. Military pacification without community dialogue or social investment makes it impossible to build trust. As a result, institutionalized violence pushes people toward placing more trust in trafficking gangs and illegal militias than in State-sanctioned 'law enforcement' [47].

The return of territory to the state is a necessary foundation for the improvement of Rio's public security, and if instituted alongside investments in social infrastructure, judicial reform, and without dispensation of impunity. Indeed, the UPP program—as an authentic form of community policing—could potentially have been used as an instrument to aid in the repair of social rights. The direct relationship between citizens and their territorial rights, both through legislation, and as embodied experience, could have been fundamental in creating the democratic right to the city for the people living in favelas. However, as it stands, the UPP is not a means with which peace or public security has been restored [112]. Nor has it delivered the promised legacy of a safe city for the Olympic Games [65]. Yet, as Mark Neocleous has pointed out, these goals have never been its objective [5,113].

The flaws in Rio's security-driven logic and its militarized management of the favelas, and the flow of capital behind it, are apparent. Just a month before the Olympics, a 78% increase in the number of deaths from police actions (up from 47 deaths in February to 84 in May), means Rio's police are now killing one person every nine hours. AI has even launched an app. called Cross-Fire for people to use as a tool to "document gun violence in Rio ahead of the Olympics" and "to urge the authorities to take some real steps to tackle the crisis" [114]. It is part of AI's "Violence has no place in these Games!" campaign. In addition to

the right to life, freedom of online expression is also being curtailed. On the first day of July, two men were arrested for publishing criticism of police on the Internet [115]. Police are also starting to test their ability to block cell phones during the Games [116].

Gunfire exchanges are a frequent occurrence both inside favelas and out. Ten shoot-outs on the city's highways have occurred since the beginning of the year, and in early June 2016, 25 armed gunmen stormed a city hospital in a shootout with police, in an attempt to free a drug trafficker. At the end of month, police raided a baile funk, killing six people and wounding more than thirty. And so it goes on. Tourists have been shot dead and robbed at gunpoint, and young girls have been gang raped. The current bodies responsible for the public security management of the city do not provide safety and freedom for the wide populations that are gravely threatened by its deficiencies. Additionally, the State security apparatus of pacification—that puts policing at the center of social order—has deliberately and intentionally sacrificed the people living in favelas, and their basic rights of citizenship, for the sake of Olympic development in service of the production of markets [117]. Vera Telles asserts that the hostile, militarized management of cities such as Rio uses security-driven logic to articulate strategies of power and further the production of markets [118]. These forms of violence and control inscribe themselves on the Olympic City as fields of tension and conflict.

10. Discussion

Rio's favela communities have continued to live under the crushing weight of discriminatory policing for decades. International watchdog advocates such as Amnesty International and Human Rights Watch, continue to call for an end to the violence and an investigation of Brazil's policing and criminal justice systems. Local organizations, such as the Comitê Popular Copa & Olimpíadas Rio have focused on strategies that monitor and confront the exclusionary nature of urban policy (and its impact) in relation to the city's mega sporting events—specifically the 2011 Military World Games, the 2013 Confederations Cup, the 2014 World Cup, and the 2016 Olympics. These organizations, and the communities they advocate for, demand meaningful oversight and accountability of law enforcement policy and procedures, and an end to the criminalization of communities of people of color who are living in poverty. They also call for government to invest in these communities by funding more than military police offensives.

Media attention is momentarily focused on Rio for the Games, but the anger and grief caused by the public killings of sons, daughters, fathers, mothers, sisters and brothers has yet to translate into policy reform. Elected state and municipal leaders fail to acknowledge any role corruption has played in the transformation of Rio into a mega-events city, or how this has exasperated the already endemic problem of police brutality and the criminalization of the poor in Rio's favelas.

Corruption, particularly inside developing contexts, diverts resources away from poverty-alleviation efforts and sustainable development. The average annual estimated cost of corruption in Brazil is between 1.38% to 2.3% of the country's total GDP—as much as US\$53 billion annually [119]. In a situation where political corruption is as pervasive as this, it is difficult to propose effective ways in which police corruption can be mitigated. The core of the problem in Rio is that corruption permeates the political apparatus almost everywhere. Policy instruments in stable contexts can use public agency to improve conditions in the public realm. However, in the case of Rio, and Brazil in general, extensive corruption impedes any situation where regular policy thinking can be applied. Corruption is a crime that relies on the agencies of the police and the courts to rectify. When these systems are corrupt to such an extent as they are in Brazil, few in decision-making positions have the interest or capability to intervene in them effectively. In situations such as Rio, it is difficult to suggest concrete policy proposals, though some basic changes to legal tenants may be proposed to ease some of the problems.

A relaxation of Shock Orders—the stringent crackdown and regularization bureaucracy of illegal goods and/or services, including housing—should be considered so that informality is not stamped out just because it is informal. The partial deregulation of informal systems has proven to be helpful in reducing police corruption and stabilizing informal communities [120,121].

Regarding drug trafficking, the US-led 'war on drugs' has created so many inter-country trafficking spillovers that only international efforts may resolve the situation. In Rio, this war is currently framed through pacification policy. The results have been dismal. There has been no reduction in violence and corruption as generated by the drug industry, only a temporary relocation of traffickers to unpacified areas when necessary. Ex-Brazilian President, Fernando Henrique Cardoso, recommends breaking ties with this failed strategy—which relies on developing countries engaging in urban warfare and on the ground combat. Instead, it recommends re-focusing on efforts that target consumption and the personal and social damage caused by it, as well as policies that target organized crime and corruption. It goes on to state that the "imposed harmful policies" of the war on drugs "have had dire consequences—corruption of the police forces and judiciary and traffic-related violence" [122].

There is no large-scale production of drugs in Brazil (with the exception of marijuana). What exists is the territorial control of urban favelas by traffickers, who are supplied with cocaine from neighboring countries, and who distribute the majority of their supplies to a domestic market, more so than transiting them out of the country. Given the high rates of poverty and unemployment in favelas, the traffickers easily form extensive networks of dealers, distributors, and consumers. Rio's large consumer market is driven mostly by the middle- and upper-income classes. According to Cardoso, "as long as demand and profitability

remain high, it will be difficult to withhold the attraction that trafficking carries to a young mass of people, including children, coming from the poorest populations. . . The police force, with some exceptions, is divided between those who assent to traffickers and those who enter the favelas to kill. To the mother of the often innocent victim, it makes no difference if the 'stray bullet' left the gun of a criminal or a policeman" [122].

Increasing levels of education has yielded positive results in regards to reducing both micro and macro levels of corruption [123]. Increasing police wages may also prove effective in reducing corruption levels on a micro-scale, however, literature on the subject is ambiguous at best [124]. The open extortion by Rio's police is so visible and so pervasive that it should be possible to address directly. However, because of a compliant judiciary system, and a fear of police reprisal, the public-at-large remain extremely vulnerable to it. Incidents of extortion may be reduced by making arrest, detainment, and judiciary processes more rigorous and transparent. Granting stronger rights for suspects is also a step toward police accountability.

The widespread use of mobile phones and social media outlets has increased the ability for the poor to expose cases of police abuse, however, the use of social media in Brazil's current political climate itself carries the risk of arrest, detainment and a prison sentence. Despite the risks, social and independent media outlets remains one of the primary ways of exposing corruption and misconduct [7]. In addition, organizations such as AI continue to arm the public with tools such as their Cross-fire app. They and other organizations such as Comitê Popular, Mída Ninja, and Rio On Watch, continue to apply pressure on members and representatives of the Rio 2016 security commission, the military police, and the government, to take specific responsibility for security operations before and during the Olympics. AI, specifically, has called for the Rio 2016 security commission "to establish full accountability mechanisms for any human rights violations committed by law enforcement officers; to investigate and hold perpetrators to account; and to fully support and provide reparations for victims and their families" [125]. However, without a complete overhaul of the entire judiciary system, which currently fails to investigate or hold police accountable in the face of overwhelming evidence, few advances toward securing the right to life are likely to be achieved.

The lack of provision of basic social services and the generation of decent, living wage employment (and income) prospects for people living in favelas also presents a barrier to developing stability within these communities. Provision of social services and basic soft infrastructure is an important component of an effective response to poverty. Funding for the staffing and maintenance of social infrastructure facilities and their programming and services needs to be consistent if any progress is to be achieved. Currently services are often discontinued due to politically-motivated policy changes and budget cuts [126]. The city's persistent failure to provide stable social infrastructure services in-

clude its revolving ‘community policing’ policies [127]. Time and time again, these policies are abandoned, leaving residents to cope with the fallout [128]. The state’s failure to deliver basic soft infrastructure services, coupled with the frequency of gross political and police misconduct, continue to reinforce negative perceptions of Rio’s state interventions in the minds of favela residents.

How public assets, especially favela territories and the funds earmarked for providing infrastructure for them, are currently being appropriated is another issue that remains absent in political discourse. Until these policies are scrutinized in a public forum by inclusive means, there will be no asset recovery, certainly none that benefits Rio’s informal sectors. This is a particularly important issue for fragile states such as Rio, where high-level corruption has recklessly misused, mismanaged, and/or misappropriated public funds, and where resources are badly needed for reconstruction and the rehabilitation of informal societal sectors.

Finally, corruption prevention measures must be directed at both the public and private sectors. According to the United Nations Office on Drugs and Crime, preventive policies, such as the establishment of anticorruption bodies, enhanced transparency in the financing of election campaigns and political parties, and the safeguarding of public services, should be subjected to codes of conduct, financial and other disclosures, and appropriate disciplinary measures that promote transparency. Furthermore, accountability in matters of public finance must be promoted by setting up methods for preventing corruption in critical areas of the public sector such as the judiciary and public procurement. Further, it should include the involvement of third sector and community-based organizations, and other civil society watchdog and rights advocacy organizations [129].

11. Conclusion

The social fabric of public space is considered critical in defining the right to the city [130]. Yet, the role that public security in informal space plays in strengthening or undermining the socio-economic stability of cities such as Rio is rarely valued. Instead, the public spaces of favelas are perceived of as arenas for contestation where people’s already marginalized citizenship freedoms—restricted by poverty, ambiguous legal status, and systemic violence—need be controlled through unmonitored militarized action [130]. This lack of monitoring increases police violence, corruption, economic exploitation of the citizens, and abuse of the police’s role of protecting public space [120].

In Rio, government leaders operate inside a corrupt political economy in which pacification is only one component. It is part of a broader condition that is commonly referred to in Brazil as *jeitinho*—the way things are done for personal

gain at the expense of, and detriment to others [131]. It is clear that the State needs to take steps to reduce the violence the city of Rio de Janeiro has seen over the past decades—some of the highest rates in the world. If Rio had followed through on the vision it lays out in its municipal master plan—one of sustainable development and the fulfillment of the social function of the city and of urban property [132]—pacification activities in favelas could have theoretically made strides in social development through participatory means. Unfortunately, gathering the political will to deliver on such a promise, in a country that is institutionally corrupt and relies on exerting lethal military force to maintain control over its citizens, remains unlikely.

Police violence, misconduct and institutionalized corruption are not the same issues in the formal city of Rio as they are in the favelas, where the separate public security policy of military pacification has far more lethal consequences. The outcomes are unequal, unfair and throw already stressed and socio-economically destabilized households into deeper levels of poverty and violence. The pacification policy is also responsible for the migration of crime, an increase in the rates of victim crimes, and the proliferation of a culture of police corruption that can be linked to organized crime, an increase in homicide rates, and the trafficking and consumption of illegal drugs, all of which are typical of the outcomes seen in other developing contexts [133].

The same bankrupt government agencies that have had a powerful influence over the crafting and management of Rio as an Olympic city are now looking at having to reconstruct a collapsed state, floundering in financial calamity and on the brink of a “total collapse in public security” [134]. The deteriorating situation caused by pacification has been described as “critical” [135]. After the Olympics a bloodbath is predicted as funds dry up even further, UPP units are further disbanded, and turf wars over gang control resurface as troops pull out.

Compounding the problem, Brazil as a nation has begun engaging in sweeping austerity measures that are hitting the country’s poorest the hardest. In the favelas, internal de facto reconstruction may be the only way forward—where informal local actors will produce change once pacification dissolves. However, the prognosis is grim as the internal return of favelas to the pseudo-sovereign state of gang rule leaves residents with little democratic opportunity to successfully, or peacefully, reconstruct their communities.

Some third sector and government bodies may be able to marginally assist in post-pacification relief, but these organizations will be limited in terms of providing solutions. One thing is for certain, a range of post-pacification challenges are about to emerge in Rio’s favelas, and no one, least of all the State, has a full understanding of their implications.

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- [8] Though it is beyond the scope of this paper to discuss the very wide and complex set of public security actions, economic development activities and urbanization projects to which the pacification is tied, the UPP must still be acknowledged as being as a dynamic part of this much broader suite of interrelated, multi-tiered government interventions which have combined to have a dramatic impact on people living in favelas.
- [9] For in depth critiques of the UPP and/or its connection to the implementation of urbanization policy see *Rio On Watch*; Ignacio Cano; Esther Werling; Robson Rodrigues; Marcelo Baumann Burgos; James Freeman; Joseph da Silva; Robert Muggah; Mark Neocleous; Leticia Veloso; Frischtak and Mandel; Burgos, Almeida, Cavalcanti, Brum, and Amoroso; and Theresa Williamson.
- [10] This information has been primarily derived from qualitative field research undertaken by the author in the field inside pacified areas between November 2010 and June 2016. It has been cross referenced against publically available data sets (IBGE, IPP, FINCON, ISP) and enriched by conversations with various representatives from government agents (municipal undersecretaries, program and project managers), civil actors (civil society organizations, NGOs, individual residents), journalistic and human rights reports, and sources at Rio's Olympic Committee.
- [11] Statistics have been retrieved from data released by the Instituto Pereira Passos (IPP; <http://www.rio.rj.gov.br/web/ipp>), Programa de Aceleração do Crescimento (PAC; <http://www.pac.gov.br>), Instituto Brasileiro de Geografia e Estatística (IBGE; <http://www.ibge.gov.br/english>) and Instituto de Segurança Pública (ISP; www.isp.rj.gov.br).
- [12] State with an uppercase "S" in this context refers to multiple tiers (federal, state and municipal) government agencies acting in official capacity on behalf of institutional goals and interests. It can also be linked to its Marxist roots as articulated by Louis Althusser and co-authors in *Reading Capital* (see in particular the original French edition 1965); and by Antonio Gramsci, whose work in political theory and sociology studies deconstructs how states use cultural institutions to maintain power in capitalist societies. Conversely, state with a lower case "s" refers specifically to the state of Rio de Janeiro.
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Review

Review of On-Scene Management of Mass-Casualty Attacks

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Submitted: 27 January 2016 | In revised form: 8 June 2016 | Accepted: 8 July 2016 |
Published: 29 August 2016

Abstract: Background: The scene of a mass-casualty attack (MCA) entails a crime scene, a hazardous space and a great number of people needing medical assistance. Public transportation has been the target of such attacks and involves a high probability of generating mass casualties. The aim of the review was to investigate challenges for on-scene responses to MCAs and suggestions made to counter these challenges, with special attention given to attacks on public transportation and associated terminals. **Methods:** Articles were found through PubMed and Scopus, “relevant articles” as defined by the databases, and a manual search of references. Inclusion criteria were that the article referred to attack(s) and/or a public transportation-related incident and issues concerning formal on-scene response. An appraisal of the articles’ scientific quality was conducted based on an evidence hierarchy model developed for the study. **Results:** One hundred and five articles were reviewed. Challenges for command and coordination on scene included establishing leadership, inter-agency collaboration, multiple incident sites, and logistics. Safety issues entailed knowledge and use of personal protective equipment, risk awareness and expectations, dynamic risk assessment, cordons, defensive versus offensive approaches, and joining forces. Communication concerns were equipment shortfalls, dialoguing and providing information. Assessment problems were scene layout and interpreting environmental indicators as well as understanding setting-driven needs for specialist skills and resources. Triage and treatment difficulties included differing triage systems, directing casualties, uncommon injuries, field hospitals, level of care and providing psychological and pediatric care. Transportation hardships included scene access, distance to hospitals, and distribution of casualties. **Conclusion:** Commonly encountered challenges during unintentional incidents were augmented during MCAs, implying specific issues for safety, assessment, triage, and treatment, which require training. Effectively increasing readiness for MCAs will likely entail struggles to overcome fragmentation between the emergency services and the broader crisis management system as well as enabling critical and prestige-less, context-based assessments, of needed preparatory efforts.

Keywords: antagonism; disaster response; emergency medical services; fire fighter; law enforcement; mass transportation; mass-casualty incident; rescue work; terrorism

1. Introduction

The scene of an antagonistically induced mass-casualty incident, also called mass-casualty attack (MCA) [1], entails a crime scene, a hazardous space, and medical challenge,

demanding a complex response by the police, rescue services and emergency medical services (EMS). Countering the aspects, with overlaying short- and long-term priorities and differing organizational roles, is key to optimal functioning in the response stage of an event. This includes early

planning for transfer of response organizations to the scene of the attack, prevention of disturbances and additional attacks, and prompt and efficient care of the victims [2]. It also implies a need to take care so that the initial rescue priorities do not unnecessarily impact long-term priorities, such as careless handling of bodies which could reduce the possibility of identification [3]. Response to an MCA thus creates high demands for all the emergency organizations to work together, to carry out their own responsibilities, and achieve the collective goal of limiting the consequences of the attack. Maximizing effectiveness of event management constitutes a defensive counter-terrorism measure—which Perlinger and colleagues [2] hold are warranted—instead of focusing only on active offensive methods, as terrorism cannot be entirely prevented.

Active shooter or bombing response scenes present risks of undetonated devices, secondary bombings and shootings against rescue workers [4–6]. Natural or built hazards may also be an issue, e.g., if the attack target is public transportation. This has been the case in some of the more publicized MCAs during the 21st century, like the attacks against the railway sector in Madrid in 2004 (191 fatalities/more than 1500 non-fatally injured people) [7] and on the subway system and a bus in London in 2005 (56 fatalities/775 non-fatally injured people) [8]. Holgersson and Björnstig showed that there was a large increase in non-fatally injured people resulting from the mass-casualty attacks (≥ 10 fatally injured and/or ≥ 100 non-fatally injured) on public transportation during the years 2000–2009 compared to the previous three decades of the study period. Simultaneously, attacks against terminal buildings, multiple targets, and using complex tactical approaches increased during that decade [1]. This may imply that preparedness among contemporary emergency organizations needs to include the ability to manage large numbers of injured people, possibly at multiple locations, including confined or collapsed spaces, in a hostile and hazardous environment.

Few health care providers have any experience in true mass-casualty incidents with the imbalance between the immediate medical need of a large number of victims and local medical resources [9]. Furthermore, civilian terrorist bombings represent unique challenges to the trauma system, e.g., they often include an urban setting, security and field triage challenges, distinctive injury patterns, and a rapid transfer and distribution of casualties to appropriate hospitals [6]. Victims of terrorist attacks may also present a combination of blast, blunt, penetrating and burn injuries. Blast injuries may be particularly challenging to diagnose and manage, as they may initially may be occult, with no visible signs of injury [10–15]. The setting of modern urban terrorist bombings also means that civilian medical systems are confronted with patients arriving at the hospital alive who would likely have died of their injuries in previous conventional war settings [6]. Moreover, there is a difference in those at risk of injury in a military setting versus those in

a civilian setting, where the civilian environment includes children and the elderly [16–19]. Antagonistic acts thus result in injuries that are not commonly encountered in the civilian environment and also augment the challenges of an unintentional mass-casualty incident by adding the factor of a hostile environment which together, demand other approaches by the responders on scene. In-depth studies of previous responses are one way to enable preparation of a more effective emergency response in the immediate aftermath of an attack [9,20].

The aim of the review was to analyze research on challenges for on-scene responses to mass-casualty attacks and suggestions made to counter these challenges, with special attention given to attacks on public transportation and associated terminals. The discussion considers how overarching findings can be used in efforts to increase preparedness.

2. Methods and Materials

This integrative literature review set out to generate new knowledge about responses to attacks through review, critique and synthesis of representative literature in an integrated manner [21]. Searches of the databases PubMed and Scopus, as well as references from extracted articles, were conducted in order to limit the risk of systematic errors. Previous studies have indicated that one database search is not enough to find all the studies that have the potential to answer a research question [22]. Searches were conducted in MEDLINE (PubMed) and Scopus in July 2014, and again in May 2015, for articles about on-scene response to terrorist attacks (all published between 1970 and 2015 in the English language). In PubMed, several test searches—with different MeSH-terms, free text words, and filters—were conducted in order to find a balance between a too-narrow and a too-broad search [22]. Components identified as search clusters in order to find articles of interest were: intentionality (weapons, explosions and terrorism), target (transportation), and consequence and management (wounds and injuries, disasters, emergency responders and emergency medical services). All words were used as MeSH-terms except for “terrorism” and “transportation”, which were also used as “free text keywords”: these terms led to the identification of relevant articles while simply having them as MeSH terms meant erroneous exclusion of relevant articles. One word from each cluster needed to be present for the article to be found in the search. A similar search was conducted in Scopus thereafter in order to find more articles related to the police and rescue services, complementing the medical perspective more prominent in PubMed. Slightly different keywords and clusters were used as MeSH terms could not be used in Scopus and the aim was to identify more articles regarding the police and rescue service (Table 1). For each title selected, additional titles of interest were also found through the box “related citations in PubMed” or the box “related documents” in Scopus.

Table 1. Database searches.

Database	Search strings
PubMed	((“Explosions”[mesh] OR “Terrorism”[mesh] OR “Terrorism”[All Fields] OR “Weapons”[mesh]) AND (“Transportation”[mesh] OR “Transportation”[All Fields]) AND (“Disasters”[mesh] OR “Wounds and Injuries”[mesh] OR “Emergency Responders”[mesh] OR “Emergency Medical Services”[mesh])) AND “English”[Filter]
Scopus	TITLE-ABS-KEY(“mass casualty event” OR “mass casualty incident” OR “mass violence” OR terrorism OR bomb*) AND (“rescue work” OR “emergency responder” OR “first responder” OR “law enforcement” OR police OR “fire fighter”) AND (emergency* AND (response OR care OR management)) AND (LIMIT-TO(LANGUAGE, “English”)) AND (EXCLUDE (DOCTYPE , “bk”) OR EXCLUDE (DOCTYPE , “ch”))

Articles of interest were reviewed in a staged manner: firstly, through readings of their titles; secondly, the chosen abstracts and then the full texts were examined to confirm that they did not meet the exclusion criteria, but met the inclusion criteria:

Inclusion criteria

(1a) attack(s);

- Specified attack or compounded analysis from several attacks
- Actual attacks/incidents as opposed to simulations or theoretical models
- Irrespective of number of casualties, as long as they were enough to trigger a formal civilian mass-casualty response in the society in which they occurred

AND/OR

(1b) public-transportation-related incident;

- Attacks in connection to public transportation and unintentional incidents with similar injury mechanisms, i.e., explosions and fires

AND

(2) which raised issues of concern for formal on-scene response

- As stated in the MIMMS framework (Hodgetts & Mackway-Jones 1995; 2004; see below)

Exclusion criteria

- (1) Chemical, biological, radiological, and nuclear (CBRN) attacks
- (2) Exposure to “World Trade Center air pollutants”
- (3) Long-term psychological and physical sequelae for victims or responders
- (4) Management and identification of human remains
- (5) Ethical considerations during and after incident management

To determine inclusion or exclusion of articles, relevance to the aim was deemed to weigh more than strict scientific standards and methodology. The reference lists of the selected abstracts were searched for further relevant articles based on titles, and those articles were read in full. Lastly, the final selection of articles was made, further excluding

those texts that after scrutiny failed to meet inclusion criteria 2, i.e. did not contain detailed descriptions of challenges during civilian incident management. This inclusion criteria also meant that reports of incident management without formal prehospital response were excluded, which implies inclusion of articles mainly from OECD countries. The findings are therefore applicable primarily in such contexts.

To assess the scientific quality of each included article, an adapted model of evidence hierarchy was created (including study designs; Figure 1), based on evidence ratings and descriptions of study design from the medical field [22–24]. However, research regarding disasters, crises, or mass-casualty incidents is not limited to health and medical science fields. The subject also presents intrinsic research challenges and is not an area that can be approached through experimental studies such as randomized-controlled trials (RCT). This does not imply that it cannot be the subject of rigorous research, but rather necessitates an adapted evidence hierarchy model that includes the types of studies involved in this multi-disciplinary research field. The study design and method by which the research is carried out and presented, constitute integral parts to the assessment of a study’s quality. Different study designs are suitable depending on the research question, but certain study designs are generally allotted higher evidence value, illustrated by schematic pyramids of evidence hierarchy where the studies higher up the pyramid are assigned higher evidence value, given that they are properly conducted and described [22,23]. Meta-analyses and RCTs were excluded in the adapted model, as there were no such studies included in the review, while systematic reviews and cross-sectional studies were considered a basis for high-quality evidence. The articles constituting medium evidence-based studies were the “retrospective case series” (a research design normally seen in the medical field), the “comparative case studies” (a research design used within the political science field), and “case studies”. Lastly, non-systematic reviews, guidelines, special reports, consensus statements, and perspective articles were considered to have lower evidence value, mainly due to lacking or no presentation of aim, methods or references in these articles.

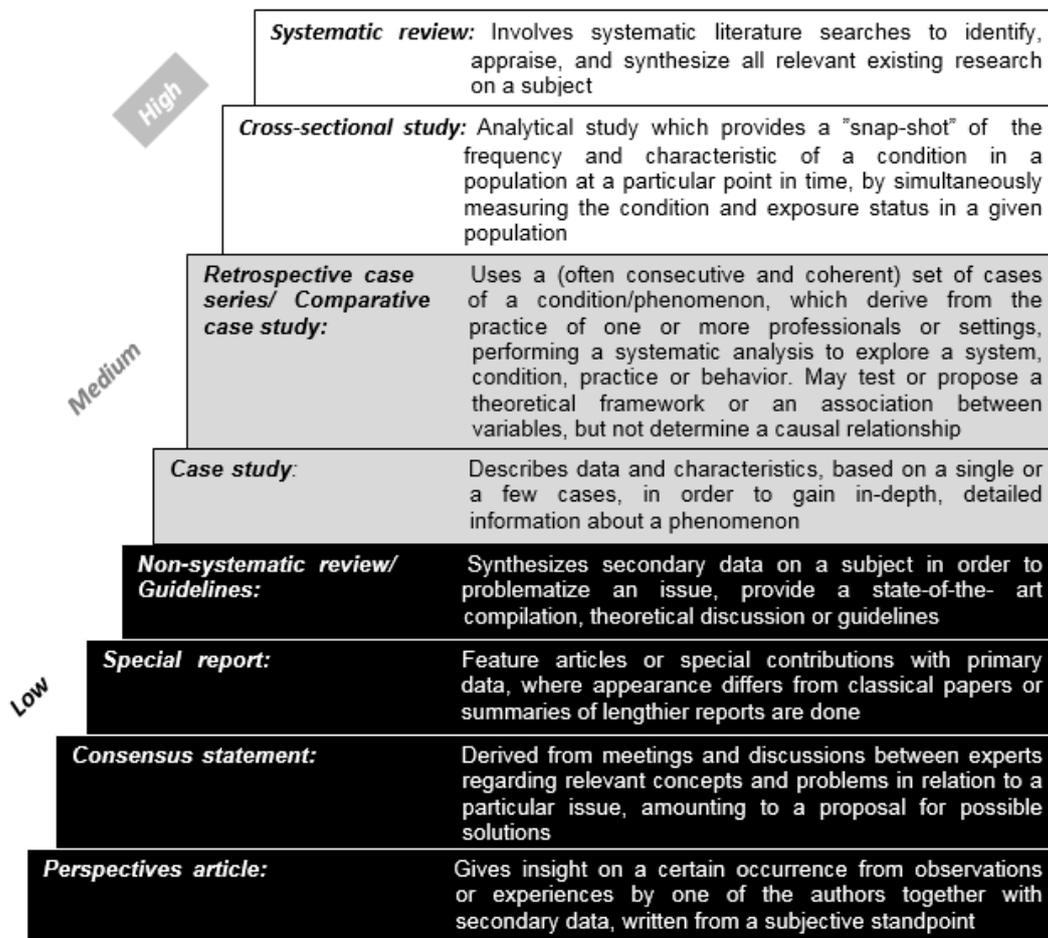


Figure 1. Evidence hierarchy, for scientific quality assessment, including study design description. (E.g. This review would fit with the description of a “systematic review”, due to its systematic and appraising nature and the ambition to synthesize existing research on MCA management).

The internationally used Major Incident Medical Management and Support (MIMMS) framework, a systematic, pedagogic model of command and management at the scene of an incident [25,26], constituted the baseline for extraction and sorting the results. This was chosen as it includes details that concern the study’s target population of the police, rescue service, and ambulance staff, and it has a medical focus that corresponded well with the findings of the literature search. The defined management priorities Command, Safety, Communication, Assessment, Triage, Treatment, and Transport, used in MIMMS, constituted the basis for extraction of information, word-for-word, from the articles. Command entailed issues concerning vertical and horizontal leadership of the overall rescue effort on scene and re-occurring management challenges. Safety included issues regarding the safety of personnel, the scene, and the survivors, with hazards denoting an unintentional safety risk and threat denoting an intentional one. Communication involved issues with transmission of information within and between personnel in the emergency organizations on scene, and along the chain of command, as well as to supporting organizations and facilities and other persons requiring information. Assessment included issues of interest for the ambulance service in or-

der to make estimates of the number of injured, severity of injuries, and needs for extra resources and expertise; in this case involving incident scene overview, the influence of the surrounding public transportation environment on injuries, and the work environment. Triage and Treatment comprised issues regarding the prioritization of injured people for medical care and evacuation; as well as the type of injuries after attacks, level of care, and treatment on scene, and the people who provide care. Transport included issues of accessing, evacuating, and distributing injured people to appropriate medical facilities. After the relevant information was categorized, the information was compounded into its core elements and synthesized in subcategories.

3. Results

The primary and related article searches yielded 300 titles of interest out of the 1,638 unique articles found in the database searches, as well as 65 “related article” titles and “reference article” titles. Further review of abstracts found that 116 articles appeared relevant to the study, and 105 articles were included in the review after full-text readings (Figure 2).

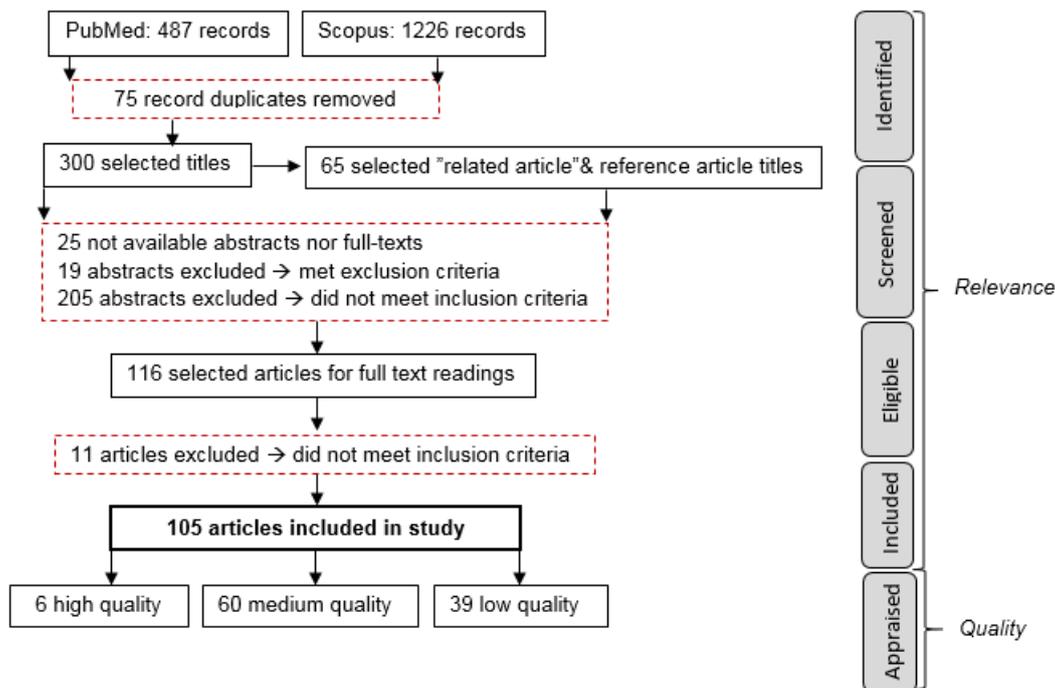


Figure 2. Study flow from identification through screening of relevance and quality.

Of the studies included, three constituted systematic reviews about blast injuries and safety issues, and three articles were cross-sectional studies (i.e., six high-quality studies). Fourteen of the reviewed articles were retrospective case series/comparative case studies and 46 were case studies (i.e., 60 medium-quality studies). Fifteen non-systematic reviews and guidelines, ten special reports, two consensus statements, and 12 perspective articles were identified in the lower part of the evidence hierarchy model (i.e., 39 low-quality studies). Table 2 summarizes the findings of the review regarding the management issues described in the articles, sorted according to MIMMS main management tasks.

3.1. Command and Coordination

Traditionally, the first management task is often labeled "command and control", but the articles included in the review clearly portray the essential aspects of coordination, which is why the labeling of this section also reflects this.

3.1.1. Establishing a Clear, Unified Scene Leadership

Lack of command, coordination, and integration between the emergency organizations have been commonly reported problems during responses to MCAs [2,27–30]. The presence of several representatives of similar emergency organizations and several responders in a leadership position have also amounted to confusion, contradictory orders, and complications for scene management [30,31]. Early establishment of a common operating picture with all involved agencies gathered in a multidisciplinary, unified command at an Incident Command Post (ICP), has been critical for the synchronization and effectiveness of rescue operations [4,5,14,32,33].

According to Perliger et al. [2], a clear picture of the situation and proper coordination during the first minutes after an attack had a greater effect on the duration of the on-scene management process than the number of medical staff or the number of wounded people. Increased standardization of the command structures, language to manage events, and clear jurisdictions and distribution of duties between the involved emergency organizations, could increase survival [29,30,34].

3.1.2. Collaborating across Responder Professions in Planning & Practice

Inter-agency planning and coordination is regarded as imperative between police, rescue service, emergency medical services, and mental health professionals [2,5,20,29,35,36]. Pre-event collaboration plans may also need to include policies for cross-border medical responses [37] and use of military units [37] or specific sea rescue organizations [35]. Priorities on the incident site should not be viewed as sequential. Instead, several actions need to occur simultaneously, carried out by different rescue organizations [5,29,34]. This necessitates functional inter-agency collaboration with clearly predetermined, common principles for incident management and defined tasks and responsibilities of each organization, which in turn need to be drilled [2,5,34,38]. If responders are not aware of the others' identities, roles, or tasks, problems in the inter-agency cooperation will likely arise [38]. Intra- and inter-agency cooperation and coordination is required for efficient management, but such cooperation is complicated as a large number of teams assemble, each with its own goals, its own organizational terminology, and its own supervision [2,7,39,40].

Table 2. Summary of defined challenges and corresponding scientific quality of articles.

Prioritized task	Management challenges	Quality appraisal of articles referenced		
		Low	Medium	High
Command & Coordination	● Establishing a clear, unified scene leadership	7	5	
	● Collaborating across responder professions in planning & practice	6	7	
	● Coordinating multi-site incidents & multi-exit scenes	2	5	
	● Balancing needs for staff & resources	2	5	
Safety	● Knowing of & using personal protective equipment	6	3	
	● Being aware of risks & having realistic expectations of safety	7	4	1
	● Conducting dynamic risk assessments & cordoning off the scene	7	7	
	● Approaching safety defensively or offensively	5	1	
	● Joining forces	3		
Communication	● Functioning equipment - overload, destruction, & incompatibility	10	12	
	● Dialoguing - content, language & relay	5	10	
	● Informing - survivors, relatives & the public	4	8	
Assessment	● Viewing scene layout & interpreting environmental indicators	9	11	2
	● Understanding setting-driven needs for specialist skills & resources	9	8	
Triage & Treatment	● Differing triage systems & labelling	3	12	
	● Directing & gathering casualties	6	7	
	● Encountering uncommon injuries	15	26	5
	● Setting up field hospitals & personnel matters	17	14	
	● Determining ambition for level of care & treatment	10	6	1
	● Providing psychological support	7	3	
	● Caring for the pediatric casualty	1	2	
Transport	● Accessing & leaving the scene	8	10	
	● Evacuating from urban or rural scenes	5	11	
	● Distributing patients	14	18	

3.1.3. Coordinating Multi-Site Incidents & Multi-Exit Scenes

Challenges with coordination have been most commonly seen at events where there has been several incident sites or more than one evacuation point [2,41]. When several attacks have occurred simultaneously and in geographically proximal areas, there has been confusion regarding the number of incidents [20,30]. This confusion leads to misunderstandings at EMS dispatch about the location of the scenes, resulting in severe maldistribution of medical assets and personnel, and greatly varying levels of treatment [30]. In order to avoid such issues, a functional central command level is essential, as multiple incidents often aggravate communication and coordination problems [20]. Multi-site incidents may also increase coordination demands due to occurrence within a catchment area of several EMS systems or jurisdiction of several involved agencies [41,42]. Another problem for incident command may occur if there are multiple exits available from the site, e.g. incidents in tunnels, on ferries or islands, as casualties can escape in several directions. This can result in dispersal of responders and can complicate organization of clearing stations and evacuation, but management may be alleviated by setting up several command posts [41,43,44].

3.1.4. Balancing Needs for Staff & Resources

A study by Juffermans and Bierens [38] indicated that logistics was an issue at all five incident sites researched, often connected to communication deficiencies. Timely and adequate supply of clothing, tools, and equipment is important, e.g., for identification, safety, debris removal, and void searches [14,45]. While the definition of mass-casualty incident commonly implies dealing with resource shortage supplying an excess of resources and personnel may lead to difficulties in tracking and locating supplies, problems with coordinating the rescue effort and may delay casualty evacuation [2,33,39,46].

3.2. Safety

The principle priority at the scene of an attack is safety of self, scene and survivors [6,14,25,47]. Rescue personnel have to face a reality where there is a need to worry about their own and the victims' safety, as well as demands to manage life-threatening injuries [6]. According to Kashuk et al. [6], balancing such safety concerns with expeditious casualty care requires training, in addition to a well-developed work ethics base and, optimally, actual experience.

3.2.1. Knowing of & Using Personal Protective Equipment

To be able to work on site, all rescue personnel need to be familiar with personal protective equipment (PPE; e.g., helmet and respiratory protection), and the equipment needs to be immediately available in the response vehicles [43,45]. Respiratory protection, for example, is not just applicable to minimize inhalation of intentional chemical or biological agents, but also airborne particles present after bombings or after a building collapse [43]. Lack of PPE use by responders has been seen during previous responses, with several accounts of on- and off-duty staff working on scenes wearing scrubs, surgical masks, and clogs [28,44,48–50]. Responders from involved emergency organizations may not be equally aware of the risks to themselves during shooting incidents or of the limitations of their protective gear. Military rounds, e.g., those used in high-velocity weapons, can easily penetrate the sides of a vehicle as well as some bullet-resistant vests [4]. Thus, while they may stop bullets from some guns, it is important not to assume that “bullet-resistant vests” are “bulletproof vests” [4,51].

3.2.2. Being Aware of Risks & Having Realistic Expectations of Safety

Caution is warranted during scene approach, as initial reports may have given the wrong location, and thus rescue personnel may place themselves and their vehicles at risk of unintentional hazard or an intentional threat [4,52]. Following an attack, responders need to consider the risk of secondary explosions or coordinated attacks [20], as attacks are sometimes arranged to create a need for a rescue effort through an action, to then target rescue personnel on arrival [4,7,9,33]. Several case studies however, tell of lapses in determining presence or absence of secondary explosives [30,44], and undetonated devices have been present at several attack sites [30,44], implying that personnel have provided treatment and placed casualty tents within the risk zone of undetonated devices [7,30]. In one case, the police collecting belongings unknowingly brought an undetonated device to the police station [7,30]. As opposed to responses revealing a lack of risk awareness, exercises have also revealed unrealistic expectations of safety at hostile event scenes by EMS and fire services. The difficult and time-consuming practice of waiting for a full risk assessment could delay provision of life-saving care [53]. Thus, it is not always possible to secure the entire site quickly enough to refrain from continuing the rescue effort. Responses to MCAs may require a transition into thinking of “relative safety” and “plus one” threat (e.g., looking for secondary devices or a perpetrator among the victims)—a frame of thought implying wariness of safety threats without expecting the entire scene to be secured before acting [5]. In a systematic review, Thompson et al. further showed that while the scene of a terrorist attack includes direct threats, the published literature suggests that dominant causes of mortality and morbidity in responders after such incidents

have been due to indirect environmental hazards [54].

3.2.3. Conducting Dynamic Risk Assessments & Cordoning off the Scene

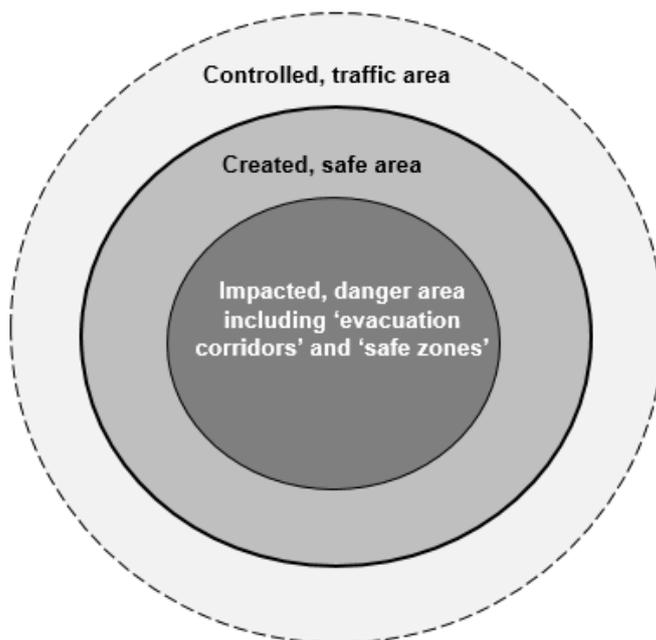
Scene safety includes assessing and ensuring the immediate safety of the incident scene from both present threats and potential hazards, which need to be continuously re-evaluated by way of a dynamic risk assessment as the rescue and tactical situation may change [40,43,48]. If there are no set policy decisions regarding whether to go in or wait, i.e. “rules of engagement”, the decision ought to be made by someone with management responsibility and not left to individual responders [43,53]. During MCA responses, there is a need to move people away from the scene [8,20], i.e., evacuate casualties, distance civilians, perform crowd control [34], and control access by checking personnel identification [9]. A suitable division of a scene may be one with three cordons, similar to those used in the UK [20]. In a schematic representation (Figure 3), the “middle cordon” could be an established safe area, functioning as a buffer area, allowing for triage and life-saving treatment of casualties outside of the immediate danger area found in the “inner circle”. The “outer circle” would then contain the designated evacuation roads, identification control, and searched buildings. The police’s ability to create and regulate the cordons is an essential task for alleviating management and provision of important medical procedures and hindering follow-up attacks [20,33,46]. Cordons also constitute an important measure to protect forensic evidence and control the flow of personnel and traffic [14], but they need to operate while minimizing barriers for essential equipment, staff, and patients [2,42,55], through pre-determined plans and functional inter-agency cooperation [2].

3.2.4. Approaching Safety Defensively or Offensively

Approaches to scene safety and management on scene differ throughout the world, depending on the local context, governance, and experiences of attacks. Based on conflict experiences in Colombia, responders do not enter a scene without governmental provision of troops in order to assure security [20]. Experience with follow-up attacks in Israel has led to the enactment of different regulations at different times [32,33]. At one point, regulations forbade medical forces from entering the scene until the police had given the all-clear, but these were not strictly adhered to, and opposite policies have also been described where EMS do not wait for security clearance [33]. Instead, wearing their mandatory protective gear, they attempt to remove casualties from the immediate vicinity of the initial event, only providing external hemorrhage control before doing so [32]. The first example describes a more defensive approach to safety while the latter tells of a more offensive approach. The offensive approach implies an aggressive entry into an unsecured scene containing casu-

alties, followed by rapidly addressing correctable trauma and promptly evacuating victims in a joint entry involving police and medical personnel [5]. The 1999 Columbine school shooting constituted a watershed incident in the development of the more offensive approach, leading the police to adopt an “active shooter” tactic. During similar incidents, the tactic implies that police rush into the building and attempt to end the threat instead of awaiting the Special Weapons and Tactical (SWAT) team. At the time of the Columbine shooting, the previous tactic led to some of the fatalities and morbidity among casualties due to unchecked hemorrhage and chock, as a result of delay in

threat neutralization and care. Use of the changed tactic has allowed tactical medics to provide care before entire scene safety clearance [29,58]. The change in tactics have also resulted from experiences of combat trauma, which can amount to similar injury patterns as those in active shooter incidents and terrorist attacks. Thus, the prehospital guidelines of Tactical Combat Casualty Care (TCCC), customized for use on the battlefield to avoid common causes of preventable death in combat, have increasingly gained acceptance in the civilian trauma care system and the principles have been adapted into different training programs for care during civilian tactical situations [29].



Zones within incident scene	Force	Task
<i>Danger area</i>	Police	Neutralize/estimate threat, Identify casualties, Create safe corridors
	EMS	“Rapid security check”, Evaluate, Apply tourniquet as needed, Evacuate to safe zone
	Rescue services	Assist extrication of trapped casualties, Clear wreckage, Assess environmental hazards
	Bomb squad (if available)	Search of additional devices
	Forensic team (if available)	Gather preliminary evidence
<i>Safe area</i>	Police	Search the premises, Create cover, Control access
	EMS	Triage and treat casualties
	Rescue services	Create cover, Provide equipment and support to EMS
<i>Traffic area</i>	Mental health professionals	Assist police investigation, Aid minor injured
	Police	Cordon off, Control access, Distance civilians, Establish evacuation route, Search buildings close to and with clear line of sight to scene and evacuation routes
	EMS	Evacuate

Figure 3. Schematic summary figure of response on the scene of antagonistic attacks, depicting zones of action and essential tasks by personnel of the responder forces (adapted from Almogly & Rivkind 2007 [34], Jacobs et al. 2014 [29]; Autrey et al. 2014 [5]).

3.2.5. *Joining Forces*

Traditionally, the responsibilities and responses of the emergency organizations to MCAs have been viewed as separate actions conducted sequentially. However, death due to exsanguination from a proximal extremity vascular disruption can occur in as little as 4-5 minutes, implying that the typical sequential response of law enforcement followed by EMS and rescue services cannot happen fast enough to avoid preventable death [29,56]. The resultant need for an integrated response of the emergency organizations increases inter-agency dependence and requires joint training as well as raised awareness in risk assessment. This is to enable an adaptable response to the situation in terms of safety risks and the need to provide care [5]. Autrey et al. [5] described an approach that guides the initial 30 minutes of a response to a blast or active shooter event, which can be remembered through the mnemonic “3 Echo”, representing “Enter”, “Evaluate”, and “Evacuate”. In an effort to deal with the dilemma of responder safety (entering a scene too early) versus delayed care to victims (entering a scene too late), the approach presents the use of “evacuation corridors” to gain access to victims by initially securing functional areas instead of the entire site [5]. In accordance with the 3 Echo principles, during a mass-shooting police immediately entered the building to contain and neutralize the threat. Simultaneously, locations of casualties were identified and communicated to incident command. Additional arriving support began to create cover, establish cordons, create command, staging areas, and coordinate medical asset deployment. Next, a secondary group of police officers gained access to identified casualties and secured the immediate area where they were located, rapidly identified viable victims, developed an evacuation corridor from a safe point of entry, and called in EMS from the staging area. EMS personnel then entered the secured corridor under police escort, and injured casualties were rapidly body swept for weapons and immediately treated with tourniquets if needed. Then, they were evacuated along the corridor to safe staging before being rapidly transported to a suitable health care facility. Police security screened the walking wounded as they were guided out of the hazard area to assembly areas for treatment on scene or medical transportation [5].

3.3. *Communication*

The key to a successful response is effective communication [57], but communication problems have been reported as one of the most common, and most serious, challenges in MCAs [2,9,20,31,35,38,39,44,46,58–60].

3.3.1. *Functioning Equipment—Overload, Destruction, & Incompatibility*

One of the most frequent problems with communication is technical inadequacy, shown by overload of landline tele-

phones, mobile networks, and radio-channels on walkie-talkies [7,20,28,30,31,39,42,44,46,53,61–65]. Equipment failure has also been caused by actual physical damage to the communication infrastructure [40,64,68]. Incompatible equipment and separate coordination centers between involved emergency organizations and between civilian and military actors have likewise caused communication and cooperation problems [30,65]. Consequences of equipment breakdown include inability to call in more staff or resources, failure to keep track of units on scene or inform them of safety issues, or prompting staff to drive to the scenes without knowing where to respond and stage [39,42,62,66]. To overcome communication shortfalls on scene, hand-held megaphones, runners, and hand signals can be used, but hand signals would require clear visibility and prior training [20,32,35,42]. Two-way radios with dedicated channels have often provided a good communication alternative, but it can be impeded in some locations, such as the subway, near crash sites, and in buildings [6,44,67]. Other communication solutions seen have been cellphone providers donating phones and activating reserve system capacity [46] or an alternative system for emergency communication only [62]. For maximum effectiveness, schemes of access overload control need to be pre-arranged [57]. The procedure could also permit the police to block cell phone frequencies in certain areas to prevent potential activation of secondary devices, without leaving units on scene deprived of means of communication [30].

3.3.2. *Dialoguing—Content, Language, & Relay*

While functional equipment is a prerequisite for functional communication, communication breakdown might still occur due to failure in the process of exchange of information, e.g. due to absence of training, poor compliance with basic principles for communication or lack of routine procedures for relaying information [2,33,38]. Functional communication between and within organizations is important [2] and may be eased through use of a common lexicon to avoid different interpretations of terms used [20]. Language barriers between the responders and casualties as well as temporary deafness of bombing victims have constituted other communication difficulties [20,35,68,69]. Problems with relaying information between responder units have coincided with large incident scenes and units divided into sub-zones [70]. Information relay has also been problematic due to noise levels, e.g. by helicopters with rotors [35] and heavy machinery [48]. Information relay between the incident site, EMS, and the emergency department (ED) have been lacking repeatedly, e.g. regarding the size and complexity of the incident [8,20,28,30,53,71]. Transmitting and documenting detailed information about the patients constitutes another challenge during MCAs as initial triage, treatment, and transfer is often conducted by different responders, with little or no contact among them. This means essential patient data and valuable time is lost repeatedly throughout the caregiving process [30]. Several researchers therefore

stress the need for documentation and information transfer, e.g., through easy-to-read triage tags [30,66].

3.3.3. Informing—Survivors, Relatives & the Public

Communication does not only need to function between people involved in the rescue effort, information also needs to reach survivors, relatives, and the general public. Keeping relatives and victims informed may prevent problems post-trauma [62]. Moreover, clear communication with the public, providing simple information, directions, and advice regarding what has happened and what to do, may calm fears, discourage people from assembling at hospitals and incident scenes, and lessen calls to emergency dispatch [20,28,39]. Setting up a transfer procedure or hotline for “incident-related calls” may alleviate pressure from the dispatch center [20,63]. Arranging a temporary Crisis Information Center or Family Assistance Center, staffed by psychologists, nurses, and social workers, have been other examples of aids to help identify and locate victims and retrieve information regarding their condition or liaise between other supportive services [67,72,73]. A method for dealing with the media ought to be included in emergency plans [46]; previous incidents have shown that if information and clear directions are not given, there may be dissemination of misinformation, hospital referral numbers, or unauthorized calls for volunteers [48,61,65]. While the media have been known to contribute to collapses in communication, there have also been examples where television and radio channels have worked as a means of mobilizing staff [62].

3.4. Assessment

All involved organizations make their own assessments of the scene reflecting their responsibilities and expertise, but this section focuses on the EMS organization in accordance with the reviewed articles. In order to enable an organized response, one person on the first medical team on scene is appointed “medic in charge” or “medical incident commander” (MIC). The role implies focus on facilitating the EMS chain of command by being the eyes and ears “on the ground” and transferring this information to EMS central command. This assessment process is started by refraining from rendering medical help, concentrating instead on a rapid scene assessment and communicating to EMS central command: (1) the Exact location of the scene; (2) Type of event; (3) present and potential Hazards; (4) Access via primary routes for approach and evacuation, and the location of the Incident Command Point; (5) the estimated Number (few, tens, hundreds) and severity of casualties; and (6) Extra resources needed [6,25,32,34]. These crucial pieces of information may be recalled by the mnemonic “ETHANE”. “METHANE” may also be used, where the “M” denotes declaring a “Major incident”, but doing so and activating disaster plans is not always an authority given to prehospital personnel [26].

3.4.1. *Overviewing Scene Layout & Interpreting Environmental Indicators*

Layout of the scene has been an observed complicating factor lengthening the time between the emergency call to completion of the evacuation [2,23]. Making a first assessment and establishing control is more difficult if the scene is divided into natural sections that are difficult to overview, such as a railway platform [30] or involving large structures like buses or trains [2]. Such situations have been managed by adding to the chain of command, where arriving units are assigned geographic zones and may report to a specific commander for the area or directly to the medic in charge [32,34,70].

In Israel, the number of “lying wounded” is used as a surrogate for seriously injured casualties [34], but several environmental indicators may be used to estimate the number of casualties at the scene of a bombing. Simply identifying the place and size of the affected area together with the time of day or week, one may be able to estimate the demographics and numbers of casualties expected [15]. With regard to attacks targeting buses and trains, in terms of estimating number of casualties, it is important to consider the risk of ejection from the vehicle and entrapment under it [74] as there have been examples of such bombings causing some of the passengers to be ejected up to 100 meters [37].

Frykberg defined several prognostic factors affecting casualty outcome of bombings, which can be observed or estimated during the initial assessment of the scene: magnitude of explosion, urban versus isolated setting, closed space versus open-air setting of bombing, and building collapse [9]. The type of bomb has different repercussions in terms of scale of destruction and likelihood of producing mass casualties. The size of the zone at risk is dependent on the type and amount of explosives, the environment, and the size of debris. Explosives hidden in a backpack are capable of producing mass casualties and causing building collapse, despite being limited in size. A car bomb, again depending on explosive type and quantity, is capable of causing destruction over a 500 m radius and may be detonated remotely or driven close to a target [75]. If the explosives are carried on their person, the destructive force of a suicide bomber also limits the amount of explosives that can be used [20], but the destructive force is often amplified by the use of high-grade explosives, a load of heavy shrapnel, and the additional ability of the attackers to detonate the explosive device in proximity to victims [73].

Many of the reviewed articles involve the effect of the setting on mortality and injuries of casualties in an indoor versus an open-air setting. There is some debate about what to call these settings, but the bottom line is that the more confined the space, the higher the rates of mortality [6]. Open-air (OA) bombings, e.g. in outdoor cafés or bus stops, result in fewer casualties than those detonating in a confined-space (CS) setting, in addition to having lower immediate, and late, mortality rates [16,76,77]. Casualties of OA bombings, however, show higher rates of penetrating

soft tissue injury due to shrapnel, which are mostly minor and can often be treated and released [78]. While Leibovici et al. [79] classified bus bombings as confined-space bombings, Kosashvili et al. [16] stated that bus bombings should be further distinguished from other CS settings, such as restaurants and nightclubs. Instead, buses ought to be considered an ultra-confined space (UCS), because buses constitute a smaller confined space, leading more people to be closer to the explosion center. Furthermore, the people in the immediate vicinity of the explosion are not the only ones in danger: the more distant passengers will also be at risk of injury due to rebound amplification of the blast wave as it is reflected [16,80]. In Kosashvili et al.'s study of 12 consecutive suicide bombings, the bus settings led to higher rates of overall mortality compared to CS bombings in buildings and OA bombings, but smaller rates of moderate and severe injuries as more individuals were exposed to lethal pressure from the blast wave. Meanwhile, lower immediate mortality rates (16.9%) were seen in CS bombings, compared to buses (21.2%), but higher rates of moderate and severe injuries, often involving multiple systems and requiring urgent surgical treatment. Almogly et al. [73] also found a difference in severity of injury between the three settings; a median number of 11, 8, and 5 casualties were in need of hospital admittance after bus, CS, and OA bombings, respectively. One may extrapolate that vehicles, such as trains and airplanes on the ground, will be similar to a bus setting, while subway trains in tunnels constitute an even more extreme setting, as they are doubly contained. In a comparison of the four scenes of the London bombings in 2005, mortality was highest and amputations were most numerous at the scene where the explosion took place in a carriage in a single tunnel [80]. The highest immediate mortality rates from bombing settings have been seen in bombings that resulted in structural collapse, and people located in a collapsed region of buildings have been significantly more likely to die or require hospitalization [73,81]. In the 1995 Oklahoma City bombing, 45% of those who perished were in the building that collapsed [61].

3.4.2. Understanding Setting Driven Needs for Specialist Skills & Resources

The scene of an attack often entails difficult working conditions, sometimes compounded by a public transportation target that adds hazards and challenges on scene, necessitating specialist training, extrication skills, and equipment for an efficient rescue [43,44,52,60]. Otherwise, surrounding hazards can delay both EMS access to victims and evacuation, in turn affecting mortality since the probability of saving critically injured victims greatly decreases with time [5,46,74]. In connection to public transportation, hazards are fuel ignition, electrical current, and surrounding traffic; issues which need to be dealt with before rescue is started [30,39,52]. Incidents in underground locations often entail difficult working conditions; for example, poor ventilation means airborne dust, smoke and high temper-

atures, lack of lighting means working by flashlight, and access to debris-filled carriages requires use of ladders [44,60,69]. Vehicle stabilization may be required before work in train carriages or buses is initiated [52], and the dynamic risk assessment needs to include re-evaluation of stability and other safety issues as responders, casualties, and equipment move around the vehicle during extrication procedures [43,52]. Noise caused by a large number of rescue workers can also reduce possibilities of hearing buried victims in incidents which have amounted to building collapse. Quickly cordoning off such sites and limiting personnel could thus increase likelihood of finding victims in the debris [82]. Attacks occurring at sea present special pre-hospital challenges when rescue is additionally complicated by the vessel structure, number of passengers, isolation, distance, and limited evacuation means [35]. Such incidents may also entail environmental hazards during rescue, e.g. water current, underwater obstacles, and rapid temperature loss, so personnel entering the water ought to be trained and equipped [52]. Other hazards during scene management have included hot ground temperatures, high debris piles and falling debris, smoke, dust, stored gases, liquids, and ammunition [39,45,47,48,71,83]. Geographic information systems (GIS) have proved essential to managing hazards by illustrating security and safety zones, building damage, and disposition of relief assets, presenting possibilities for the future where GIS professionals may serve as "information first responders" [48].

3.5. Triage and Treatment

While "triage" and "treatment" are divided in MIMMS, here they are presented together as the issues are closely inter-related in the management of injuries on scene.

3.5.1. Differing Triage Systems & Labeling

The goal of field triage is to identify that minority of critically injured (salvageable) casualties who need immediate care, provide them with lifesaving procedures, and assign the casualty priority for further treatment [18,32,50,84] and transport, accounting for the casualties' need for treatment at a hospital as well as considering hospital capability and capacity [18,32,84]. In order to denote the different triage categories, numbers, colors, or symbols may be used [18] on tags [50] or tape [16] attached to the casualty. They could also be directly drawn on with permanent marker [85]. There are several different triage systems used, with two to five categories [20] utilized to mark the condition of the casualty and/or priority for medical evacuation. For large-scale responses, which may require action by several EMS organizations, standardization of triage systems is important. It is not only considering choice of triage system that is important but also addressing what should be the foundation and indicator for the labeling to avoid being left up to the interpretation of each responder [30,35]. Many previous incidents have shown the use of a planned or improvised, simplified,

two-category triage, dividing casualties into an “urgent” or “non-urgent” group [8,35,46,70,72,86,87]. While triage into more categories is likely suitable at the ED, there may be a reason to evaluate whether a wider use of a simplified triage for MCAs is appropriate in the prehospital setting [8].

3.5.2. Directing & Gathering Casualties

The assigned triage categories are divided into triage sites established in searched, cleared, and secured areas away from the scene, where surviving casualties and medical personnel are protected from further hostilities [9,14,34]. The great majority of injuries suffered by immediate survivors of bombings are mostly non-life-threatening, resulting in “walking wounded” people who can be temporarily gathered, observed, and treated in a designated area together with other non-urgent casualties, while being given and supplying information [32,34,88]. While the duration of a suitable observation period may be under question with regard to bombings, one study showed that all cases of pulmonary primary blast injury developed within 1 hour [15]. A high incidence of anxiety and other-stress related phenomena often follow bombing incidents, which implies that many mildly injured patients will require psychiatric evaluation. As an emotionally traumatized person may require both medical and psychosocial support for years, substantial treatment of non-urgent casualties also constitutes a part of a good initial response [89]. Achieving early site control and informing walking-wounded individuals where to go for assistance constitutes an important measure for their safety and keeps them from independently deciding where to go, resorting to “self-evacuation” [15,20,47]. As complete use of EMS for evacuation has been rare [42,47,90], pre-event plans should consider self-evacuation inevitable and have procedures to manage it, e.g., by preparing a separated area of treatment of mildly injured people close to the ED at the nearest hospital or by treating and releasing casualties with minor injuries gathered at the scene, or sending them to more distant hospitals, to avoid overwhelming proximal facilities [32,86,89,91]. Directing non-urgent casualties to a separate triage area allows most of the EMS work on scene to focus on those with more urgent injuries [20,34].

3.5.3. Encountering Uncommon Injuries

Different types of attacks obviously result in very diverse patterns of injury and medical needs, but the focus of this study has mainly examined research related to bombings. Previous armed assaults however, have shown that gunshot victims have a higher propensity for moderate injuries compared to blast victims, as well as slightly higher inpatient mortality, which creates critical need for immediate resuscitation [92]. Shootings therefore create great demands on prehospital care and rapid evacuation in order to decrease mortality of the critically injured [29,56]. While identification of gunshot injuries can be more straightforward [87], detonation injuries may be problematic to diagnose and treat,

and are uncommon in most civilian settings [6,10,11,15]. Bombings, however, constitute the most common way to perpetrate terrorist attacks [75], which is why some aspects relevant for triage and treatment of blast injuries in the prehospital stage will be presented more in depth.

A characteristic injury pattern of bomb explosions is one of a complex but often non-lethal nature, where most casualties do not require hospitalization as only a small number have severe injuries [9,32,39,55,62,75,82,90,93–96]. The vast majority of deaths from bombings usually take place at the scene or en route to the hospital, followed by few early and occasional late deaths [17,58,62,97]. In a study of 33 MCAs, Einav and colleagues [96] found that roughly a fifth ($n = 236$; 20.4%) of the injured were considered urgent casualties. Consequently, a large majority of surviving victims can likely be triaged and treated on an outpatient basis [17,97]. Medical preparedness should anticipate most injuries from bombings to be nonfatal secondary and tertiary blast injuries [9,10,44,81,97]. Personnel responding to the scene of a high-explosive detonation will be confronted mostly with injuries comprising conventional blunt, penetrating, and thermal trauma, but they need to be wary of the less common, potentially life-threatening primary blast injuries, which may present subtly or delayed [15]. Even with no detectable external trauma, there is a risk of primary blast injuries, e.g. to the lungs or bowels. This needs to be considered, especially in casualties categorized as non-urgent [12,34,79,82,97,98].

Trauma after explosions is often divided into primary, secondary, tertiary, and quaternary injuries [9,15,84]. Primary blast injury (PBI) occurs as a direct effect of changes in atmospheric pressure caused by a blast wave, mainly injuring gas-containing organ systems, notably the middle ear, the lungs, and the bowel [15]. Blast lung injury (BLI) is not the most common injury, but it causes the greatest morbidity and late mortality from blast effect and may be complicated by pneumothoraces or hemothoraces [47,99]. Early recognition of BLI may improve outcome by directing patients to an appropriate level of care and initiating early treatment [77]. Clinical signs and symptoms of BLI include dyspnea, chest pain, hemoptysis, hypoxia, and/or wheezing [47]. Abdominal blast injuries are rare, but if the casualty displays clinical signs such as nausea, vomiting, or abdominal pain, they need to be aggressively treated, with serial abdominal examinations and nothing given by mouth [9,47].

A long-cherished belief among rescuers has been the examination of the tympanic membrane to quickly triage victims for other primary blast injuries [100], but several studies [13,76,101] have shown that tympanic membrane rupture (TMR) is neither a reliable predictor of other PBI, nor a reliable method of diagnosis. Presence of a perforated eardrum may indicate exposure to significant overpressure, warranting evaluation; however, the absence of eardrum rupture does not exclude the person from being at risk of other PBI [13,14,99,101]. A study of 647 terrorist bombing survivors showed that all casualties with BLIs had a fully developed clinical picture in the first hour after admission

and that intestinal blast injury were rare and typically associated with other severe injuries [13]. Secondary blast injuries (SBI) occur when objects accelerated by the energy of the explosion strike a victim, often causing the most numerous injuries from blunt or penetrating ballistic trauma [14,15,17]. Tertiary blast injuries (TBI) can be viewed as the converse of SBI; the missile is stationary and the victim is propelled by expanding gases from high winds, resulting in a high incidence of blunt trauma from tumbling and impacting objects [15,98]. Quaternary injuries often imply injuries due to delayed causes such as crush injuries from building collapse or inhalation and burns from secondary fires [27,47,75,78]. Due to several injury mechanisms, explosions can cause a multiplicity and variety of injuries to several regions of the body in a single individual, referred to as a multi-dimensional injury [68,82,84,91,102].

The anatomic site and nature of injury constitute some important prognostic factors among bombing victims [9]. Traumatic amputation of limbs caused by bomb blast carries a high mortality and thus has often been seen as an indication of fatality [37,80]. However, in the 2005 London bombings, nearly one-fourth (24.5%) of those with traumatic amputations survived [80]. Thus, it has been held that blast injuries associated with late death such as primary limb amputation, open-long bone fractures, abdominal injuries, chest injuries, and blast lung injury, should instead be given priority in triage [9,97]. During the chaotic circumstances after an attack, it may be difficult for EMS to determine levels of consciousness and signs of life such as pulse and blood pressure. Almogly et al. [77] therefore proposed some easily recognizable external signs of trauma after bombings, to ease triage of BLI and to help EMS distinguish salvageable from non-salvageable casualties. From their study of 15 suicide bombings, they found that patients with skull fractures, burns covering more than 10% of the body surface area (BSA), and penetrating wounds to the head and torso, were more likely to suffer from BLI and require advanced trauma care. The presence of amputations, open fractures, and burns (covering more than 30% of BSA) was significantly higher in fatally injured people. If combined with no sign of life, these should be categorized as “unsalvageable”, according to Almogly et al. [77]. Almogly et al. later showed that casualties with penetrating head injuries and those with more than 4 body areas injured were significantly more likely to suffer from BLI. As for intra-abdominal injuries, they were more likely in casualties with penetrating torso injuries and those with more than 4 body areas injured. Based on this, they moved to simplify EMS triage further by focusing on vital signs and the number of regions injured, where more than 4 injured body regions implied transfer to a Level I trauma center [103].

3.5.4. Setting up Field Hospitals & Personnel Matters

There are two main approaches to providing prehospital care to trauma victims: Basic Life Support (BLS) treatment and rapid evacuation techniques (formerly referred to as

“Scoop and Run”); and Advanced Life Support (ALS) on scene, prior to transport (formerly referred to as “Stay and Play”) [104]. The choice of whether to give advanced treatment on site and establish collections points versus quickly transferring patients to hospitals is based on the prevailing conditions, mostly affected by proximity to hospitals and the availability of transportation. Generally, this means that the ALS is recommended in rural areas while the BLS is executed in urban areas [7]. It has repeatedly been observed that by the time medical staff from the hospitals are at their highest number at the scene and assembly points have been established, the most seriously injured have already been transported to the hospitals [66]. According to Kluger [84], definitive care by well-trained physicians in well-equipped facilities has a higher impact on patient outcome than care on scene. Setting up field hospitals and sending mobile teams from hospitals to provide advanced treatment on scene is an alternative when there is not enough prehospital staff, when casualties are trapped, when appropriate hospitals are far away, or where limited transport facilities cause a delay in evacuation [53,68,82,105]. There have also been instances where physicians have been beneficial on the scene by enabling extrication and transfer to hospital, sometimes through field amputations [55,58,61]. Mostly though, researchers [31,55,57] have concluded that physicians and nurses are not suitable for incident sites if they are untrained and unprepared to work in a suboptimal and dangerous prehospital environment because the risk to them is big, while the benefits are small. To provide meaningful assistance at the scene, personnel ought to be trained, organized, and have clear assignments in order to understand the workings of emergency services and be familiar with the pre-hospital environment [41,44,46,60]. The expertise of physicians and nurses may be of better use at the hospital, as individuals perform best when executing an extension of their normal work, where facilities and equipment are familiar [38,57,87]. The importance of training prehospital responders in the specifics of antagonistic attacks and general MCI management has also been highlighted to assure that they work with adapted procedures for mass casualties and have knowledge in management of blast injuries [53].

Several incidents have amounted to large groups of self-deployed medically trained “freelancers” and other volunteers; people approaching the scene or hospitals on their own initiative [39,44,46,48,55,62,83,106]. This has sometimes been discouraged and at other times encouraged, highlighting the importance of incorporating bystander response in response plans and training [20,29,57]. In Israel, educated and trained lay bystanders are considered front-line first responders and constitute a cornerstone in the defense measures against terrorism [20]. While meaning well, several examples exist where aid provided by volunteers has not been helpful [46,49,50,55]. Other accounts however, highlight beneficial actions, such as application of improvised tourniquets, carrying of stretchers, work at formalized triage and treatment stations in safe areas, and provision of evacuation of injured [27,32,43,49,50,53,61,71].

3.5.5. Determining Ambition for Level of Care & Treatment

Treatment on site is best when focused on life-saving procedures while enabling evacuation [34]; Frykberg [9] concluded that a short interval between injury and treatment, and early aggressive resuscitation, constitute a prognostic factor for survival. It is imperative that medical staff check their instincts to deliver as much care as needed to each victim while in a mass casualty setting [32,49]. Instead, triage and treatment in MCAs often necessitate a battlefield mentality, using damage-control principles where minimally required care is provided to the maximum number of injured with consideration to available resources and personnel, on scene, and in receiving institutions [6,8]. Field personnel are challenged with identifying salvageable casualties in order to treat them sufficiently so that they reach the hospital alive [6,32,37].

According to TCCC guidelines, control of external hemorrhage is placed ahead of airway control, exchanging the traditional ABC mnemonic (for airway, breathing, circulation) with MARCH: Massive Hemorrhage Control/Airway Support/Respiratory Threats/Circulation/Hypothermia [29]. However, the extent of treatment, and what procedures should be carried out in the area of explosion or shooting, is incongruent or unclearly described in the included studies. Some hold that external hemorrhage control should be the only procedure conducted before casualties are taken to a designated safe zone [5,70]. Others, hold that initial on-scene treatment should follow fundamental resuscitation protocols including spinal immobilization (c-spine), opening of obstructed airway (chin-lift maneuver), and control of breathing, while all other treatments are deferred to the next survey [32,34,47]. The main thing is that a minimum of emergency forces provide a minimum of procedures on an unsecure site, holding off the majority of staff and treatment on scene at established safe areas. With regard to field medical care, Stein and Hirshberg [99] concluded that airway with C-spine had probably saved the most salvageable casualties after terrorist explosions. Oxygenation may be monitored using pulse oximetry and, if necessary, improved by oxygen via mask and a rebreathing reservoir [47,99]. Needle insertion to relieve pneumothoraces may also be prudent [37,47,99], and tracheal intubation may be performed if the patient's pulmonary status deteriorates [34,47]. Treatment of air embolism is supported by placing the casualty in the Trendelenburg and left-lateral-decubitus position [47]. Alignment and stabilization of fractures is another important treatment in the field. Covering open wounds, where possible, is also helpful/desirable [47,99]. Limbs that have experienced crush injuries may need to be splinted, and at an early stage severe crush injuries may be treated with IV fluids to help minimize the complications from rhabdomyolysis [47]. One important cause of coagulopathy in trauma patients is hypothermia, the risk for which may be reduced by covering wounds [34] and generally protecting casualties from the elements. Burns ought to be covered with a clean dressing, and IV fluids should be started for burns covering large BSA [47]. The Modified Brooke formula may be better

for the management of burns as the use of Parklands formula, in addition to overestimation of burnt BSA, can cause over-resuscitation [71]. The air-medical evacuation of bombing casualties from Bali to Australia demonstrated the risk of gradual deterioration in casualties with burns, threatening limbs which were previously well perfused which underlines the need for continuous assessment [85]. If amputations have occurred, the patient's limb should be covered, hemorrhage controlled and the amputated body part salvaged, covered, and transported to the hospital with the patient. Completion of partial amputations is not advised when in the field [47].

While use of tourniquets in military trauma is well established, their use in civilian practice has been more controversial [34,80,107]. While some accentuate the time-critical situation for casualties with exsanguinating hemorrhage [29], others hold that in the case of terrorist bombings these usually occur in urban settings with short evacuation times where plenty of volunteers are available to apply direct pressure [34]. However, providing speedy application of tourniquet to control bleeding in hemorrhaging casualties is encouraged in several articles to improve survival in MCAs [5,29,56]. In a civilian prehospital response, recommended interventions to severe bleedings thus include application of tourniquet to control extremity hemorrhage, hemostatic dressings to control bleeding from sites not amenable to a tourniquet, and "Sit up and lean forward" posture for casualties with direct maxillofacial trauma (which can result in either airway obstruction or bleeding into the airway) [29]. Support for tourniquet use was indicted in a study from the response to the 2005 London bombings as all the patients with amputations, except one, who were admitted to the Royal London Hospital, with makeshift tourniquets, survived their injuries while the one with no tourniquet did not [80]. Risks with improvised tourniquets however, also have been seen, e.g. after the Boston Marathon bombing. Several of the improvised tourniquets proved to be venous tourniquets, non-hemostatic and with paradoxical bleeding upon ED arrival [107]. In order to avoid unnecessary complications, a tourniquet should be able to "completely occlude arterial blood flow, have ease and speed of application under tactical situations and in the dark, be removable, portable, durable, inexpensive and cause minimal tissue necrosis and pain" [34]. Ideally, the tourniquet should be removed as soon as possible after application [34], meaning that it is important to document time of application. Direct pressure can also be used to control bleeding from external bleeding sites by applying consistent and significant pressure to the packed wound, with the injured person placed on a firm surface. In severe bleedings, direct pressure must be sustained until the person reaches the operating room [29], a procedure which may not be feasible in an MCA setting [34].

3.5.6. Providing Psychological Support

While this review is not focused on long-term psychological effects of terrorist attacks, some aspects relevant for on-scene care will confer terrorism as a "perfect traumatic stressor combining elements of malevolent intent, actual or

threatened extreme harm, and unending fear of the future” [108]. Despite this, most people will recover without significant psychiatric sequelae although transient symptoms of stress are common after experiences of mass violence [36]. Early mental health assessment and intervention does not focus on providing “psychological forms of treatment” but rather down-to-earth and practical provision of basic services [36,88]. After large-scale trauma most psychological care is physical and includes establishing safety, providing food, shelter and medical assistance, mental health triage, and orientation with local services and information [36,88]. Psychological first aid also entails reducing psychological arousal, mobilizing support for those most distressed, keeping families together, and facilitating reunions with loved ones [36]. Providing information about community services, that the victim can access later, and describing upcoming steps in the criminal investigation and legal proceeding is also important [109]. Once mass terror survivors feel they are out of immediate danger and their basic needs have been met, they usually want answers; a shortage of accurate information is potentially traumatic and harmful if wild rumors result in panic or deprivation of services [88]. Response to a terrorist attack also requires a practical task of the responder: to obtain information from the victim in order to maximize the possibility of apprehending the perpetrator(s), prevent further violence, and plan for aiding other potential victims [88]. Responders are in a unique position to help victims deal with the impact of their ordeal by helping them restore a sense of safety and control, e.g. by providing a safe and quiet location in which they can treat and interview them [109]. Collaborating with mental health clinicians may be useful in such situations to help balance concerns for victim welfare and the need to obtain detailed information. Integrating them into responses to MCAs could therefore prove wise during pre-event planning [36,88]. It has been indicated that people who can contribute to the rescue in some way manage better as they do not feel helpless, they gain a measure of control [36]. Exemplified “buddy aid” approaches in some responses, where those triaged with minor injuries are encouraged to assist [50], may be one way to achieve this. In the case of bombings, it should be noted that victims suffering from primary blast injuries may fare poorly by strenuous physical activities, EMS personnel therefore need to reduce the activity level of potential blast-exposed individuals [15]. Planning has been highlighted as an area of response in need of improvement, in relation to psychological assistance [7,30,110]. Lacking command and coordination of the mental health responder group has led some receivers of aid to experience being “killed with kindness”; they are overwhelmed with offers of support and services [67].

3.5.7. Caring for the Pediatric Casualty

In addition to EMS personnel worldwide being less experienced, in dealing with emergency management of critically ill children compared to adults, pediatric victims of terrorist

attacks suffer injuries not usually seen in the age group [19]. Waisman et al. [18] describe an experience-based development of a pediatric triage algorithm with changes to the performance of triage in children due to the difficulties and time-consuming practice, of obtaining measurements of vital signs and blood pressure in children, and due to different mechanisms of injury in children because of their physiological and anatomical characteristics. For further details please see original references [18,19]. Since children have unique characteristics and pediatric mass-casualty incidents are rare, prehospital personnel may have difficulties performing certain clinical procedures such as intubation or establishing an intravenous line. It has therefore been recommended that only simple life-saving procedures such as opening an airway or maintaining ventilation should be performed for children at the scene of an MCA. Other procedures should be postponed until the child’s arrival to the ED. Optimally, children should be evacuated to a hospital with pediatric capabilities, but if they have critical injuries they may need to be stabilized at the nearest hospital first. If possible, it is also advisable that EMS staff find a familiar adult to keep the child company to the hospital during such a stressful event, but not if it results in significant delay in patient evacuation [19]. Emotional trauma, e.g., due to separation from parents, is a critical factor during pediatric care, which implies that it is vital to identify children assigned to the “delayed care” category with anxiety and acute emotional stress and provide them with psychosocial support [18]. Letting children help with small maneuvers, like undressing to allow examination, may be helpful for restoring their sense of control in an otherwise disorienting situation [88]. If the weather is cold or if children have to be undressed for decontamination or triage, responders have to consider that they are more susceptible to hypothermia [18].

3.6. Transport

Three major types of challenges to evacuation were exemplified in the articles reviewed, most of which coincide with unintentional mass-casualty incidents.

3.6.1. Accessing & Leaving the Scene

Maintaining clearly identified, physical pathways for entry and exit from the scene is essential in order to ensure rapid and appropriate evacuation, as well as coordinated and controlled access [2,20]. Blockades by debris, underground location, or access through narrow streets have repeatedly made access difficult, resulting in dispersion of casualties to multiple collection points and prolonged evacuation time [2,28,30,33,60]. Multiple access or unclear designation routes have caused problems, not just for evacuation but also initial command, communication, and cooperation between units [2,30]. Multiple exit points for those wounded of varying severity and lack of coordination among the rescue teams have also led medical teams to miss groups of casualties, delaying their care [2].

Road congestion has made it difficult to get both to and

from the scene [39,64], occasionally exacerbated by rescue service, security, or police forces blocking entrance of EMS to the scene [2,33,59] and other times alleviated through police establishment of designated evacuation routes to the hospitals [32,46,63,68]. Targeting public transportation infrastructure, like subways and buses, can aggravate obstructions to medical evacuation, preventing medical staff from reaching their post and discharged patients from clearing the hospital [60,111]. Ways to adapt to road congestion include pre-planned deployment of paramedics on bicycles; using helicopters to move doctors, equipment, and casualties; and sending nurses onto main roads to triage people seeking medical care [60,63,69].

The topographical location has been known to create access difficulties both for road-bound vehicles and helicopters [70]. Such accessibility difficulties may result in inefficient convergence of ambulances on the incident scene, forcing them to wait in queue at a distance from the scene [112], and creating a more physically taxing rescue effort. Use of all-terrain vehicles have been beneficial for transportation in cumbersome terrain [50].

3.6.2. Evacuating from Urban or Rural Scenes

A determinant of mortality among victims of antagonistic attacks is the availability of medical resources at the scene and the prehospital system of transport and care. Longer times for rescue and transport to definitive care, from isolated areas, tends to result in higher mortality rates [9]. The distance to definitive care and available means of transportation, from urban or rural incident scenes, require different approaches in terms of the degree of prehospital care on site versus transfer and care at an appropriate medical facility. Pinkert et al. [95] concluded, that when an MCA affects an urban area, in the vicinity of several hospitals, the best course of action involved rapid arrival of a large number of ambulances, rapid primary triage, use of evacuation priorities, and rapid distribution of casualties among all nearby hospitals in the area. Such a response requires synchronization of the EMS response and appropriate distribution of casualties to hospitals [64,95]. As most attacks occur in an urban setting [34], rapid evacuation will be suitable in most cases, but when attacks occur in rural areas, there may be limited EMS and small, local hospitals with fewer resources, and limited abilities to cope with a large number of injured people [106]. Such responses may require the use of other modes of transportation for medical evacuation, transfer of staff and equipment, higher degrees of treatment on site, or use of local hospitals as casualty collection points, dependent on their capabilities.

Helicopters and fixed-wing aircrafts have been essential to deploy staff and equipment to the site or primary receiving hospitals [44,93,105,112], as well as use for primary or secondary evacuation and distribution of injured [93,105,112]. Improvements in air evacuation have significantly upgraded the ability of the EMS to rapidly evacuate MCA casualties in distant areas to tertiary care facilities,

but effective use of air-medical evacuation requires planning, coordination, and training [112]. It is also a mode of transportation sensitive to the weather conditions, thus not necessarily serviceable when needed [92]. Coordination of helicopters have been challenging due to poor weather conditions, uncontrolled airspace, unsettled safety settings, and unsuitable placement of casualty clearing stations [41]. To facilitate air-medical evacuation, incident command ought to gather and transmit information regarding landing zone characteristics and severity of injuries prior to reaching the site, possibly by assigning an Air Support Manager [112]. While air-medical evacuation can be a suitable option for incidents at sea, it may also entail difficulties depending on the vessel's size: there is not always space to land and the use of a rescue hoist is time consuming. Winds from rotors risk blowing away equipment not lashed, impacting the care of those on scene [35]. Some medically challenging conditions and treatments described in connection to air-medical evacuation of blast and burn casualties include underappreciated hypoxemia; unrecognized pneumothorax or arterial air-embolism [15]; stabilizing fractures, [102]; maintaining normothermia [20,27] and providing correct amounts of fluid replacement to avoid swelling of the airway [27].

3.6.3. Distributing Casualties

Like other mass-casualty incidents, distribution of casualties to appropriate health care facilities is one of the most important issues after MCAs [104], as bed availability, capability to manage specific injuries, and potential for casualty transfer is vital to ensure good patient care [4]. Distribution of casualties however, has been problematic after several MCAs [2,17,28,64]. Optimal distribution of casualties is hinged upon well-established local command and communications with the receiving hospitals, facilitated through preparation [6]. From two MCAs, Rodoplu et al. [17,28] found that maldistribution seemed associated with distance from the scene, type of medical facility, personal preference of survivors, lack of central coordination of ambulances, and lack of field triage.

A common issue after urban MCAs has been the hospital nearest to the site becoming overwhelmed [20,30,58,94]. This is largely due to the common phenomena known as self-evacuation or self-triage, where people with minor injuries make their own way to the hospital [29,59,84], aided by non-medical vehicles [27,30,61,65,66,72,86,94,113]. This results in an early arrival pattern of mild casualties who can be treated and released, while ambulances carrying the more severely injured and casualties requiring extrication arrive later [15,32,43,62,86,94]. Similar patterns may also arise if minor injured people are assembled and transferred to the hospital by bus, as this can be achieved more quickly than the medical evacuation of more severely injured people [64]. If evacuation of minor injured people is controlled, it is more suitable to evacuate them to a more distant hospital, and if arrival of patients is not controlled and the hospital is overwhelmed,

it may be necessary for it to function as a casualty collection point, triaging between high-acuity and low-acuity casualties, and secondarily transporting some to more distant facilities [47,111]. Despite the pattern of the closest hospital often being overwhelmed, recommendations and practice from several incidents have been to evacuate all patients with immediate, life-threatening injuries to the closest hospital for evaluation and stabilization [86,95,96,104]. Meanwhile, casualty-clearing stations may be used to treat those with minor injuries on site [66], providing Advanced Life Support (ALS) until they can be evacuated directly to a suitable facility [104].

Another approach [86,106] is to evacuate all casualties to the hospital closest to the site for advanced, hospital-based resuscitation. The principle of an evacuation hospital (or “triage hospital”) has been recommended when the needs of the patients greatly outweigh the capabilities of the receiving hospital or when the expected number of patients amount to a continued patient flow. This sets the hospital to a mode of treating and discharging mild casualties while stabilizing, and secondarily evacuating, patients that require admission [93,105].

4. Concluding Discussion

In this review of 105 articles regarding response challenges on scene of a mass-casualty attack, difficulties were found corresponding to each prioritized task, as defined in the MIMMS framework. Two aspects of importance, not equally highlighted in the original framework, were functional coordination and collaboration, as well as the influence of the environment. While the former has been noted in analysis of previous responses to unintentional incidents, the significance of setting, noted during scene assessment, is especially vital during bombings. It is not only vital in estimating the number of direct fatalities and injured, but also as an indicator for possible injuries and needs for equipment and specialist care. Besides issues related to the “assessment task”, other specific challenges in MCA management, compared to unintentional incidents, were particularly clear in relation to safety, triage, and treatment. Meanwhile, problems related to command, coordination, and communication were the most commonly reported, showing the overlap in management of unintentional and intentional incidents. Hence, experience in dealing with unintentional incidents may prepare responders for challenges with command, coordination, and communication, whereas specific challenges with safety, assessment, triage, and treatment would remain foreign. Many of the included articles claim that preparedness for MCAs thus require planning and specific training [5,6,32,52,60,71,90,95,96,104]. It may be inferred that if inter-organizational collaboration is to be more offensive [5,29,56], these preparatory efforts will be even more vital. In relation to preparatory efforts, Vidali and Hutchens [114] stressed that fragmentation between crisis management and public safety system

actors often constitute a hindrance to readiness measurements and capability aggregation. They further highlight the need to distinguish between capacity (quantifiable assets such as equipment, vehicles and radios) and capability (qualitative measurements of e.g. skills, training and coordination). If the resources are to be ready for use, both aspects need to be accounted for, and failing to do so could amount to poor investment decisions. Examples of such investment were observed by López-Carresi [30] after the Madrid bombings, where the Madrid-based EMS decided to purchase more mobile telephones even though scarcity of transmission equipment had not been the cause of communication failures. Clearly, what is needed to increase preparedness depends on the context, but as López-Carresi pointed out, there is often a reluctance to make deep structural or system changes (which may be interpreted as criticism of the current system), as opposed to adjustments of the existing work schemes (which may be seen as previous lack of funding or other resources). Effectively increasing readiness for MCAs will thus likely entail struggles to overcome fragmentation between the police, rescue service, EMS and the broader crisis management system, as well as enabling critical and prestige-less assessments of needed preparatory efforts.

Regarding the strength of evidence of the management challenges, articles related to direct and indirect threats to safety on scene, [54] and issues concerning blast injuries with implications during assessment, triage, and treatment had higher scientific quality [10,11,78,80,101]. The scientific quality of the articles varied, partly due to the difficulties of studying an issue where circumstances and occurrence cannot be foretold or controlled (effecting study design). It was also partly due to the limitations of this study- as a result of the inclusion and exclusion criteria used to achieve the study’s aim (effecting eligibility). If one were to search more databases, or additionally include studies based on simulations and relating to unintentional incidents, some findings may have been made more robust. In order to be feasible, one would have had to focus such a study on a specific prioritized task on scene and/or the perspective of only one responder group. This study instead lays the basis for such studies in the future and includes valuable issues of consideration for personnel within the EMS, police, and rescue service. The inclusion of articles of lower scientific quality and the breadth of the review may imply limitations for practical use. However, it is not meant as a guideline for how incident management should be conducted everywhere, since incident response needs to be adapted to local incident management systems, resources, and expectations. One cannot simply cut and paste a system onto another; however, reoccurring bottlenecks can be learned from other countries, and appropriate adjustments for dealing with such issues can be made in accordance with the structure of systems elsewhere [115].

Acknowledgements

AH conceptualized, designed the study, acquired the data, analyzed eligibility and quality of identified records, conducted the data extraction, and interpreted the data. She drafted and revised the manuscript after feedback by professors Ulf Björnstig and Britt-Inger Saveman, whom se-

cured study funding from the Swedish National Board of Health and Welfare. The author is grateful for funding by the Swedish National Board of Health and Welfare. Critical readings of the manuscript by Professor Ulf Björnstig and Professor Britt-Inger Saveman were also appreciated. The author declares no competing interests.

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Research Article

Human Security: China's Discourses and Experience

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Submitted: 28 February 2016 | In revised form: 3 July 2016 | Accepted: 2 August 2016 |
Published: 6 September 2016

Abstract: This article addresses three research questions by elaborating on how the idea of human security is understood or defined by the government and social actors in China; how the distinction between the “protection” aspect and “empowerment” aspect of human security is understood and accepted; and what particular downside risks are perceived as pressing human security issues in China. Amongst these the major ones include air pollution, food security, and cyber security. The study reveals that, whilst as a term “human security” is not frequently used, there have been significant discussions leading to the consideration and implementation of various human security practices in China. The idea of human security has been firmly established and threats to human security detected. For both the government and academic community in China, human security and state security are not necessarily confrontational but can rather be combined, often complimenting each other. Recent developments in China are pointing to a positive direction in terms of human security in the country.

Keywords: China; empowerment; human security; practice; protection

1. Introduction

Human security, defined as freedom from want, freedom from fear and dignity, by the Commission on Human Security led by Sadako Ogata and Amartya Sen, which the UN General Assembly endorsed by referring to the “right of people to live in freedom and dignity,” has also drawn attention in China, where it has helped made progress over the years. Though the very term “human security” has not been widely used in China thus far, a number of similar ideas or practices have been flourishing in China recently. This paper tries to elaborate on China's experience with respect to human security by respectively dealing with three major issues, namely, how the idea of human security is understood or defined by the government and social actors; how the distinction between the “protection” aspect and “empowerment” aspect of human security is understood and accepted; and what particular downside risks are perceived as pressing human security issues in China. The paper

concludes with an overall assessment of human security practices in China and the right direction indicated by their examination.

2. The Understanding of Human Security in China

2.1. A New Consensus

In China, the government is often wary of new academic terms and tends not to use them directly. However, the facts, according to our previous study, have clearly shown China's trajectory of increasingly attaching more importance to “human” (both individual and collective) security. Much more attention has been paid to mitigating threats to human security and a number of measures are being taken in the practice to fulfill this mandate [1]. I would like to emphasize the convergence of the idea of human security and China's practices. My findings have disproved the following statement, i.e., “the very notion of ‘human security’ has so far not appeared in

the Chinese language in any possible translation, and the People's Republic of China (PRC) has not even accepted or adopted the concept of 'human security' in either domestic development papers or foreign policy guidelines. . . " [2]. My examination has suggested otherwise. Though the Chinese government has only used the very term "human security" on a few occasions, China has been engaged in the enterprise for enhancing human security.

China's becoming more open and susceptible to human security has much to do with its experience within the United Nations system. As one of P5 members of the UN Security Council, China has long been supportive of the UN, the most important international organization in the world today, and has played a proactive role in various areas such as peace-building, development, and global governance. Over the years, the UN has encountered a number of criticisms and it is widely believed that reforms are needed, of which China is supportive. Nevertheless, Beijing always supports the UN believing that it plays an irreplaceable role in global governance, and tries to prop up the UN to encourage it to play such a role well [3]. This has been an unchanged priority on China's foreign policy agenda.

China's steady backing has boosted the status of the UN in world affairs, at a time when the world is faced with growing global challenges into the first decades of the 21st century. Meanwhile, the UN has taken the lead in advocating and/or spreading norms or principles, and this helps affect and shape China's perspective. Usually, UN initiatives or proposals attract China's attention and prompt Beijing to take a close look at them, before taking actions to adapt to the new norms or principles. For example, China was involved in the deliberations and adoption of the UN World Summit Outcome document in 2005. Although it is not the same thing as the "Responsibility to Protect" idea proposed by the International Commission on Intervention and State Sovereignty (ICISS) [4], to some extent the Outcome Document is consistent with this in terms of thinking around protection. The Outcome Document attempts to strike a balance between protecting innocent people around the world from being harmed and avoiding the abuse of external intervention or selfish behavior in the name of protection. For this the outcome document imposes limitations by listing four specific crimes against which the international community should take action to protect people from being jeopardized, i.e. via genocide, war crimes, ethnic cleansing and crimes against humanity. In this way the Outcome Document has become a new international legal document. China was involved in this process and made its own contribution to it. Thus, involvement in global or regional institutions has pushed China to clarify or develop its thinking on human security.

Against the backdrop of the great earthquake and tsunami that devastated Japan's Tohoku region, in June 2011, the Ministerial MDGs Follow-up Meeting was held under the UN framework in Tokyo, Japan. China sent Vice Foreign Minister Cui Tiankai to attend the meeting. In the speech he delivered, Cui, as the representative of the Government of China, stated:

"To discuss the MDGs from the angle of human security offers a thought-provoking perspective. We believe that the MDGs and human security are interrelated and should be mutually reinforcing. The MDGs embody so many aspects of human security, while the realization of MDGs aims at greater well-being and security for more people in the first place".

By pointing to the fact that "the general picture of global security remains disturbing. Civilians in North Africa and the Middle East continue to bear the brunt of turmoil. Innocent women and children are still being displaced or killed in armed conflicts in various parts of the world", Cui stated, "These give rise to the call for *a new concept on security* (italics added) and an international political order where the United Nations should play a central role. We strongly believe that the purposes and principles of the UN Charter should be upheld, and Security Council resolutions should be implemented in a faithful manner. [. . .] In a word, if human security in the larger sense of the term is still so much threatened, there is little hope for better individual security" [5].

This is an illuminating example of China clearly and definitively adopting and using both the idea and terminology of human security in the context of a formal UN meeting. Though it was an event on MDGs and not specifically on human security, the term "human security" was explicitly employed to express China's opinion and position.

This discourse was reinforced by further developments. In February 2014, Ms. Fu Ying, Chairwoman of the National People's Congress Foreign Affairs Committee, was invited to and spoke at the Munich Security Conference. She argued that the security for people to survive and develop is fundamental to all forms of security. The core of the Chinese Dream of the revival of the Chinese nation, proposed by President Xi Jinping, is to make the 1.3 billion Chinese people live a better and happier life. In other words, all ordinary people have the right and are entitled to live with dignity in a secure environment. This is the attraction of China's success story to the world, as well as the charm of the Chinese dream [6]. This line of thinking has many elements in common with the widely shared "human security" idea. For instance, both have an emphasis on individuals and their happiness, and this has to be fulfilled together with national development. Ends and means should come along together, and the persistent value should be that people should not be sacrificed for whatever national goals.

The key point here is that China's security concept is undergoing a profound transformation. A new consensus has emerged which assumes security does not equal military security, and security should not only be comprehensive but also people-centered. "National security" now has new connotations.

2.2. The Third Plenum

During the landmark Third Plenum which was held in November 2013, a major resolution for the comprehensive deepening of China's reform was deliberated and passed. The long reformist document has sixteen parts and sixty items. As an element in the thirteenth part, on a new social

governance system, it announced the decision to create a new National Security Commission. The purpose is set to improve the relevant institutions and strategy in order to better safeguard China's national security. According to the explanatory speech Xi Jinping gave, reform and development are conditioned on national security and social stability, without which wider reform and development cannot be further advanced. At present, China is faced with the dual pressure of safeguarding national sovereignty, security, and development interests externally and maintaining political security and social stability internally. All kinds of risks that can or cannot be foreseen are clearly increasing while the country's institutions and mechanisms for security cannot meet the need of maintaining national security well, and thus comes the demand for setting up a powerful and capable platform to coordinate the whole national security work. The responsibilities of the National Security Commission include formulating and implementing national security strategies, advancing the construction of national security rule of law, deciding national security guidelines and policies, and studying and solving major issues in the national security work [7]. Quite understandably, this major decision drew considerable attention from both home and abroad.

In April 2014, the first meeting of the new National Security Commission was held. According to the speech Xi Jinping delivered, the security of people has to be the main objective. It has to be insisted upon that state security should in every sense serve the people and rely on people. The mass foundation of state security has to be laid and consolidated [8]. This means that state security and human security is not confrontational but, rather, that the two can be combined in coexistence.

Internally, China is undergoing a modernization process during which a number of contradictions are growing. At a time of rapid economic and social development, a series of social problems are accumulating which have not been "digested" well. Some Chinese observers have noted that "group incidents" resulting from unbalanced distribution of interests break out often and that they are affecting social stability negatively. Externally, the growth of China sees some powers and neighboring countries hedging against China's interests, and as a result contradictions and frictions in China's neighborhood are increasing. Moreover, these challenges to social stability and security from home and abroad are jointly entwined making them difficult to cope with. In the current era, the concept of national security is enriching in depth and widening in breadth, involving various issues in various areas. They cannot be dealt with only via foreign affairs, national defense, and security departments but, rather, are demanding more agencies, social organizations and even the whole of society to work together [9].

Since the initiative to create China's NSC appears in the "social governance system" part of the November 2013 resolution, its domestic and internal security dimension is self-evident. In the meantime, it is also obvious that the commission's work involves two dimensions, i.e. both external and internal, rather than just one. Thus the notion of

"security" that the initiative refers to is of comprehensive nature. It is not difficult to come to this same conclusion simply by thinking of the July 5, 2009 incident in Xinjiang, the riots in Tibet and Tibet-related immolations in its neighboring provinces, and the killing at the Kunming Railway Station on March 1, 2014. During all these incidents innocent people were killed or injured and some of the incidents were taken advantage of by hostile external forces. That is arguably why it is pretty widely believed that internal security will be the dominant concern for China's NSC, at least in its early stage. When ordinary people can be harmed by violent terrorist attacks in any place and without any warning, a sense of insecurity arises and this can be frightening. Thus, when freedom from want is no longer a problem in today's China, it is reasonable to expect that ordinary people may also be free from fear. A broad concept of security of this kind logically becomes the goal for China's NSC.

In fact, as Cui Shunji of Zhejiang University points out, since the initiation of reform, China's high-level attention paid to poverty reduction, the pursuit for a sustainable development model, and China's proposals for constructing a "harmonious society" and "harmonious world" all indicate that China has regarded guaranteeing basic human needs, social justice and harmony, as well as sustainable development as a continuum for national security [10]. "Letting people live a happier life with more dignity" has become the goal of national development, which indicates that China's recognition of human security has been elevated to the political level. Putting people first and "governing for the people" have become the new thinking for governing the country. As a reflection of the foreign policy changes, handling foreign affairs for the country is shifting to handling foreign affairs for the people [10].

2.3. The "Non-Traditional Security" Discourse

In China's research community, "human security" is often related to the discourse on "non-traditional security" [11], a term used for years. Obviously, so-called "non-traditional" matters are in stark contrast to more "traditional" matters. Traditional security usually refers to military security, namely, assuring national security through boosting military power. After the end of the Cold War, threats to security increasingly come from non-military domains and become unconventional or "non-traditional" security threats. There are many examples of such issues and they have often been listed as financial crisis, terrorism, transnational crime, environmental degradation, the spread of HIV Aids, scarcity of water resource, food security, and so forth.

According to the summation by a leading Chinese researcher, non-traditional security is broad-based, complex, and multi-dimensional. First, non-traditional security is broad-based: While traditional security falls into military, political, and diplomatic areas, and its supreme value is the pursuit of peace and the elimination of war or the "possibility of war," non-traditional security is more about economic, social, cultural, environmental threats as well as the emerg-

ing cyber security and space issues. In addition to peace, “non-traditional security” relates to risk, crisis, emergency, and daily threats to life. It also relates to natural disaster accidents, emerging public health incidents, and major public security events.

Second, non-traditional security is complex: Threats to non-traditional security are mainly threats to “societal security” and “human security”. Society and its people are the chief referent objects of non-traditional security, and a “safe China” has societal and human dimensions. For individuals, “safety” means that the security of people is guaranteed or, namely, that individuals enjoy a state of existence in which a person’s body is not injured, mind not harmed, property not deprived, and living environment not undermined.

Third, non-traditional security is multi-dimensional: According to the place and origin of non-traditional security events, the threats to non-traditional security facing a country can be placed into four categories: (1) “exogenous” non-traditional security threats which take place abroad and chiefly require a diplomatic approach; (2) “endogenous” non-traditional security threats which take place at home and chiefly require domestic handlings; (3) “bi-dogenous” (双源性) non-traditional security threats which take place in the peripheral areas that involve both domestic and international handlings; and (4) “multi-dogenous” (多源性) non-traditional security threats that involve both traditional and non-traditional security issues and require the involvement of the military in addition to other organizations [12].

Throughout the above process of ideational transition, there occurred a few landmark crises that strike China deeply, including the 1997 Asian financial crisis which highlighted the importance of financial security, the 2003 SARS crisis which highlighted public health security, and the March 1, 2014 terrorist attacks at the railway station of Kunming, capital of Yunnan Province. The March 1 violence against innocent people especially amplified the serious security threat that ordinary people could encounter in their daily lives. This genuine risk gave rise to a widespread sense of fear.

Until recently security policy in China was mainly focused on state security, the importance of which nobody denied. Now, “human” security has been put forward and it is gaining momentum. It has undeniable value orientation. In fact, Chinese scholars speak highly of “human security” and argue that it goes beyond the limits of state-centric traditional security research and is the least traditional theory in the non-traditional security domains [13]. Human security research explicitly sees people as a collectivity and individuals as the referent object of security. This transcends the dilemma of more traditional security theory, since the state can bring about insecurity to its citizens. Such a possibility, after all, raises a question over the relationship between state security and human security. Generally speaking, Chinese researchers do not endorse the view that individual security overrides state security or that the two are confrontational, but rather affirm the reasonableness and value of state security at the same time.

For Shi Bin, a professor at Nanjing University, the human security idea is a focal embodiment of non-traditional security and “new security” concepts, and yet the relationship between “human security” and state security is actually much more complicated. He has tried to elaborate on this in the following ways.

First, both state security and human security, in terms of their security concern or value pursuit, have legitimate claims. However, neither of them can become absolutely dominant. “Human security” is of course the fundamental goal and ultimate value of human development. The value orientation of putting people first with “human security” at the center possesses the moral high ground and legitimacy. However, a person has both individuality and sociality, and an individual is often weak and helpless. Resisting foreign military invasion and safeguarding national sovereignty and territorial integrity are therefore in the nation’s common interest. Nonetheless, the traditional state-centric security idea and strategy indeed ignore the security needs of many non-state or sub-national entities, and cannot adequately deal with external non-military threats such as environmental degradation and pandemic disease.

Second, although there is a tension between “human security” and state security, and the two may conflict in practice, they still can be mutually accommodating and complementary if handled and balanced well, and therefore be favorable for upgrading the overall security degree of all entities. People’s security and welfare, and the improvement of their living condition and life quality, are an important base for national identity, social stability and political legitimacy. In this sense, “human security” and state security are not necessarily contradictory [14]. For Shi, the “human security” discourse has tangible Western value orientation, and in practice has a tendency of overriding the security interests of the sovereign state. The acclaimed “paradigm shift” from the state to individual excessively downgrades the positive role of the state in dealing with various security challenges.

For Zhang Yunling of the Chinese Academy of Social Sciences, the rise of non-traditional security issues does not mean that traditional security is no longer important. The appearance of non-traditional security on the agenda and it being stressed imply that it has been included in the category of “security”, and therefore the formation of a “comprehensive security” concept that includes both traditional and non-traditional security as well as the corresponding security policies seems to be desirable [15].

Taken together, when “non-traditional security” is increasingly becoming the mainstream discourse in China, the researchers tend not to deny the value of state security but rather see human and state security as mutually accommodating. Nevertheless, the theoretical shortcoming of “non-traditional security”, as Guoguang Wu rightly points out, is obvious as it is generally deployed against “traditional security” without any positive and substantive defining of the contents and nature of new “securities” [2].

Moreover, these days many things are securitized and many issues become security issues. This may not be a

healthy situation. When security is discussed too much, this could lead to a growth in insecurity. For example, in China, “food safety” was not discussed often before but is now widely talked about. This implies food safety was not an issue but it is now. The deterioration of food safety is a negative development which involves the need for moral reconstruction in society.

Thus interaction between state security and personal security is not a zero-sum game. The more state security does not mean the less personal security, and vice versa. The ultimate goal should be a calibrated balance between the two.

As has been shown, the Chinese research community has attached more importance to the issue of “human security” in recent years. Meanwhile, they are not just following others’ footsteps, but have come up with their own analyses and views. Some researchers stress that both the starting point and ultimate purpose of any society is the individual. The emancipation of the individual should be the fundamental core of any social emancipation. It is the individual who is the final destination of security and the core value any security is supposed to protect, while the state is the means or a temporary purpose [16]. The establishment of the idea that “the individual is the purpose” as a value has great significance for the Chinese society, after having drawn lessons from the history of the People’s Republic since 1949.

During the Cultural Revolution period, many innocent people were attacked, detained, or persecuted illegally and immorally, and the rights of people ignored or harmed. After that disastrous decade, people reflected on their painful experience and thought about the phenomena of imposing horrible acts on innocent people which should never happen again. In the early reform period, there emerged a movement in China’s intellectual community aimed at promoting the discussion of issues around humanism (*rendao zhuyi*) and alienation (*yi hua*), during which many academics affirmed the significance of humanism and argued for the promotion of human value. Some of them cautiously adopted the term “Marxist humanism” or “socialist humanism” to distinguish from the so-called “capitalist” doctrine. Not long after, the debate abruptly came to a halt due to a political intervention. However, along with further economic reform and considerable social development, the awareness of the individual man or woman in China was awakening and the value of the individual confirmed. The initiative towards humanism which began in the 1980s in fact became accepted by the whole of Chinese society over time. This was also reflected in discussions and research on “human security” since it was made clear that guaranteeing human security is the value basis for maintaining non-traditional security. The protection of people and human development should be set as the ultimate goals of any security policy. This is a decisive and valuable intellectual progression.

The paradigm of human security opposes harm towards human freedom and rights for motives of economic growth or social stability. Neither is it in favor of pursuing economic

benefits and communitarian policies at the expense of sacrificing the security and dignity of the individual or the nation. The fundamental reason lies in the value of the individual which is the key and ultimate aim, and there is no higher goal than this.

The previous practices of both “collective security” and “common security”, as one leading scholar in human security—Yu Xiaofeng—argues, could not have avoided the limitations arising when the state is regarded as the chief actor. Aside from these, the notion “shared security,” which Yu proposes, regards the human community as the central target and beneficiary of security, the protection of human life as the value base of security, social safety and prosperity as the priority goal of security, and harmony and cooperation as the supreme principle for security interactions between the states [17]. This goes beyond the traditional discourse and has the potential of being further developed theoretically.

3. Protection and Empowerment

According to the Human Security Now report and the October 2012 resolution adopted by the United Nations General Assembly as a follow-up to paragraph 143 on human security of the 2005 World Summit Outcome, human security has two dimensions, i.e. protection and empowerment. In China, the dimension of protection has drawn much attention, as is epitomized in the doctrine of “putting people first” (*yiren weiben*) and “diplomacy serving the people” (*waijiao weimin*), which we have discussed in detail in an earlier study [1]. This is reinforced by further evidence and here is one example. There was a Chinese newspaper correspondent who reported from the National People’s Congress (NPC) sessions and wrote about his experience. He was deeply impressed by the attention the NPC delegates paid to the concrete issues concerning people’s daily lives, including social insurance, income distribution, rights of peasant workers, food safety, unreasonably high drug prices, and protection of stakeholders’ interests. For him, never before had those kinds of issues been so meticulously discussed at the NPC [18]. The changes the correspondent detected indicated positive ongoing trends in human security terms.

A harmonious society has to be a society that puts people first, which means people’s everyday life is a priority for that society. A government that puts people first is a government that represents people’s interests. Economic and social development should put human development at the center, and human development is the ultimate value judgment for social progress [18]. Meanwhile, “the achievement of human security is a cooperative venture between individual, society, and the state [19]”. Government as a “necessary evil” is very much a Western invention and it is not a Chinese idea. Traditionally, people in China often have strong wishes regarding government and they want government to do good things for them. Compared to the Western political culture, they have less vigilance and more expectations for government. One revealing example is the use of the term “parent officials” (*fumu guan*) to refer to

government officials, which indicates that they are expected to play a paternalistic role. Without a cooperative venture, human security cannot be achieved.

On the protection side, while people-oriented ideals are noble ones, the challenges come from the process of implementation. Not surprisingly, many problems are encountered, a prominent one among which involves the area of land recruitment and resident relocation. Sometimes the failure to protect the rights and interests of ordinary people has led to conflict, and in some cases even extreme acts of protest. When property development businessmen and power coalesce, they arguably together undermine the interests of the ordinary people who are affected. Protecting people's legitimate interests has become an outstanding issue in China's human security amidst drastic social changes and urbanization.

Moreover, the leadership came into office with a promise to narrow a widening gap between rich and poor and shift to a more environmentally and economically sustainable growth model. "GDP worship" has prevailed since GDP became the government officials' principle measure of accomplishment, leading to the initiation of 'achievement projects' and "image projects". These poorly planned projects can lead to ill-conceived planning and environmental damage. When this became obvious, a shift of policy had to be undertaken. "No GDP growth at the expense of environment" is becoming a new norm and "ecological civilization" the new banner.

The reform era has been characterized by success in terms of rapid economic growth and the improvement of people's living standard. After three decades of successful economic development, the country was standing on a new starting point. If the ruling party's historical promise to 'let some people get rich first and eventually arrive at common prosperity' was a prerequisite for reforms to unfold, and if three decades later this historical task was basically fulfilled, what the reform enterprise has to accomplish now is that promised common prosperity. This is a goal that will justify and inform further reforms. The reaffirmation of realizing common prosperity in line with the principles of governing for the people and building a comprehensive and balanced well-off society will guide future reform with a clear direction [20]. To fulfill its pledge to narrow the gap between rich and poor and 'unwaveringly pursue common prosperity', the leadership has to have the people in their heart and take them seriously. This is part of the "Chinese dream" which is not a bad term. What the new leader, Xi Jinping, expressed right after the 18th Party Congress, "To fulfill the people's desire for better lives is what we shall strive for", sounded dear and close to the ordinary Chinese people.

On the empowerment side, there have also been a number of measures. Only when a person has the capability for survival and development can he or she enjoy real freedom. The capacity for development empowers an individual. Today's China should not only accept empowerment besides protection, but also appreciate its importance as a way to realize human freedoms and guarantee human security [21].

Education as a right is the fundamental and most significant form of empowerment, as human experience has

repeatedly revealed. Thus, educational development is a significant way to empower people, especially compulsory education. China has reasons to be proud in this regard. It possesses a tradition that puts much emphasis on education, in which parents always try their best to pave the way for their children to receive good education, and often they are willing to make sacrifices. In China, nine-year compulsory education has been in practice for years. In 1989, Project Hope was set up as a supplement which later became well-known throughout Chinese society. It was initiated by the Central Youth League and the China Juvenile Development Foundation as a philanthropic enterprise to help less developed areas to establish primary schools, financially support dropped-out children in poorer regions to return to the school, and improve education in the rural areas. The project received society-wide attention and support. Implemented successfully, the project has positively changed the fate of hundreds of thousands of kids from poor families and also beefed up the whole of society's awareness of educational importance, therefore helping to enhance China's fundamental education.

As a major initiative for the future, the Third Plenum set the aim to modernize China's "governance system" and governing capability, a long-term goal for China. An important part of it is the shaping of a new social governance system. During the 2014 National People's Congress session, President Xi joined the Shanghai delegation for deliberation of the government's work. For him, the key for future social governance is institutional innovation, and its core lies in the people. Only when our people are living harmoniously can society operate stably and in an orderly manner. For Han Zheng, the party secretary of Shanghai, social governance is up to everybody, and the governing process should serve the all-round development of the people. Rule of law is the foundation of social governance, without which there can be no basis for long-standing good governance and robust stability [22]. For that matter, what is required of the grass-root cadres includes regarding people's matters as their own matters, whilst always trying to understand their feelings and demands. Again, the key challenge is to make this happen in real life. Fortunately, in China, there have been local autonomous grassroots organizations that play an intermediate role and serve to help handle problems at a grassroots level. They offer assistance to ordinary people who encounter any difficulty, and they also, for example, mobilize donations to help people in regions that have been stricken by earthquake or by other natural disasters. The work of these local self-help organizations has proved to be useful and reassuring in terms of social governance.

4. Prominent Human Security Threats and the Chinese Responses

Since "human security is central to non-traditional security, what it is concerned about are all kinds of factors that are directly threatening human security" [23]. In today's China, prominent among those direct threats are air pollution, food safety, and cyber security.

4.1. First, the Air Pollution Threat

2013 was a year that impressed everybody in China with the seriousness of air pollution. Heavy smog emerged in not just North and Northeast China, but was also reported in other regions, creating an alarming situation. The degree of seriousness caused alarm in neighboring Japan and South Korea as well. As the smog was spread, it became obvious that the environment people were living in was deteriorating. The situation acted as a red light signaling the dangers of the existing pattern of economic growth, which was consuming a great amount of energy and yielding considerable waste. If people had already been aware of the issue, smog's covering the whole country in 2013 shocked and awakened everybody to an unprecedented degree. Different from before, the threat and the related risks became real and present. With many people walking in the streets were wearing masks, the sense of human insecurity became tangible and imminent. In this context, the specific threat of air pollution almost became the number one risk in people's minds, though as will be seen shortly, that has remained as food safety.

To cope with this threat, in June 2013 China's State Council laid out ten measures to prevent and combat air pollution. As a follow-up, in September, China released an Action Plan to implement this, in the form of a blueprint to fight against air pollution by 2017.

This desire to act has continued. In his Government Work Report delivered in March 2014, Premier Li Keqiang swore to "fight pollution like fighting poverty". When he was looking around the city of Beijing, President Xi emphasized that the sprawling pattern of urban development had to be contained and steps should be taken to deal with smog pollution and improve air quality. Among the five requests Xi made, one was logically to reinforce the degree of reining in air pollution. The top priority set for combating air pollution and improving air quality was to control PM2.5, and major steps should be taken in areas including reducing burn of coal, strictly limiting the growth of car use, adjusting industries, tightening management, and joint prevention and control [24]. Xi's move clearly sent a signal that steadfast measures were needed for better air quality.

Previously, the Chinese leadership pledged to launch a "revolution in energy production and consumption," and said that urbanization must be balanced with "ecological security" [25]. However, pollution was worsening— which is now posing a serious threat to human health and social stability. To reduce air pollution and carbon emissions, Beijing (pop. 20 million) is attempting to phase out coal-fired power plants within the city's urban core, replacing them with cleaner-burning natural gas power plants. These measures are also basically valid for other cities. After all, fighting pollution is relevant to everybody's security and this has become a high-degree consensus within Chinese society.

Similarly, China's energy sector had a watershed year in 2013 also. Reforms that could have a profound impact on China's environment and energy policy were floated. And

with concerns over air pollution mounting throughout the year, the country is poised to shift away from its reliance on coal and to use more clean energy including natural gas. Shale gas exploration is making progress in parts of the country. Driven by the crises, a true transformation is under way but surely will take time.

4.2. Second, Food Safety

In recent years, there have occurred a series of food contamination incidents throughout the country which caused serious concerns among the Chinese people. While the broadcast of the recording movie *A Bite of China* is absolutely popular nation-wide, a bite of food and its safety has become a case in point. A 2010 poll by Xiaokang (小康 Moderately Well Off) Magazine and Tsinghua University in 12 Chinese cities found that food safety ranked number one of all social concerns among those surveyed, reflecting mounting anxiety after the 2008 melamine crisis [26,27].

In the context that the continual food safety problems are plaguing China and threatening human security, it is not true that the government is unaware of or insensitive to the food safety problems. When appearing before the press conference, Premier Le Keqiang responded by stressing that "food safety is of utmost importance" (2013 National People's Congress press conference). When answering the question concerning the missing MH370 aircraft, he stressed that "a case involving human life has to be treated with utmost care" (*renming guanlian*). Again, the 2014 Government Work Report promises to adopt the strictest surveillance, the most severe punishment, and the most serious accountability measures to resolutely govern hygiene on the dinner table and reassure "security on the tongue tip" [28]. In fact, making efforts to ensure food safety is a widely shared necessity and a consensus in China.

Specialists distinguish the issue into two kinds, one is food security which refers to sufficiency in quantity, and the other is food safety which refers to the quality of food. While the former involves whether there is sufficient overall provision of food, for which China avows to "hold the bowl firmly in our own hands," the latter involves whether people can be assured they eat food safely everyday. In the good old way, food scarcity trumpeted food safety. But today the main problem in China lies in food safety as people are alarmed by the risk of different forms of contamination. This even spilled over into China's foreign relations, as was epitomized in the spoiled Jiaozi (Chinese dumpling) incident between China and Japan recently.

The incident originated in Hebei Province. An employee in the Tianyang food factory resented his income. As revenge he deliberately poisoned some Jiaozi. The contaminated Jiaozi were exported to and sold in Japan. Some customers bought and ate them and were contaminated. Eventually, pesticides were found in the frozen dumplings exported from China to Japan. This was a single case of crime that caused grave consequences. The reputation of China's food products was seriously hurt and the Sino-

Japanese relationship was somewhat affected also. This once again highlighted the close link between domestic and international issues.

In the final analysis, the root cause lies in individuals. The issue of “moral collapse” has been raised to refer to the situation. To what extent it is true can be debated. It was believed that the overuse of fertilizer and pesticide was rampant. Disconcertingly, the growers distinguished between what they themselves ate and what was to be sold in the market, passing on lower quality food for consumption by customers. Again how widespread the phenomenon is can be discussed, yet the existence of these kinds of practice suffices to make people feel unsafe regarding food.

As a result, there has arisen a lack of public trust in food safety. Tighter regulation has to be carried out. More transparency is needed to help build public trust, including more official data and statistics about improvement (or deterioration) in food safety, more freedom for media and civil society to verify official data, more effective actions from the government in handling corruption and misconduct in food safety practices, and more protection for whistle-blowers who uncover the production of unsafe food and, more importantly, the corrupt officials involved. Further measures have to be taken for China’s improved food safety regulations, consumer education, as well as supply chain traceability and sustainability.

4.3. Third, Cyber Security

The internet use has increasingly become a part of people’s everyday life in China. By 2013, there were over 600 million internet users in the country, and mobile internet users reached 461 million. The numbers are increasing and China has the largest number of netizens in the world. Thus cyber security has become a prominent issue. In fact, China is one of the major victims of cyber attacks. The covert activities which Edward Snowden revealed highlighted the vulnerability of those nations and individuals who are monitored illegally and immorally [29].

At the government level, a Central Small Leading Group on Cyber Security was created. It was emphasized that cyber security involved national security and development, as well as the career and everyday life of the vast majority

of ordinary people, and was therefore a major strategic issue [30]. The breakdown and vulnerability of the internet can have widespread impact on people and their lives and therefore must be avoided.

5. Conclusion

This article has addressed its three research questions by elaborating on how the idea of human security is understood or defined by the government and social actors; how the distinction between the “protection” aspect and “empowerment” aspect of human security is understood and accepted; and what particular downside risks are perceived as pressing human security issues in China, the major ones being air pollution, food security, and cyber security.

As has been indicated, though as a term “human security” is not frequently used, there have been significant discussions and various human security practices in China. The idea of human security has been firmly established and threats to human security detected, while problems exist as China has been undergoing a still unfinished process of industrialization, urbanization, and drastic social change. The good news is that progress is being made. And theoretically, only when the security of the individual is of paramount importance in policy making, can there be globally accepted values. China has gotten far beyond the lip service level of cheaply talking about people’s interests. They are now integrated into human security in its full sense. Threats to human security can include domestic risks, yet they are often transnational ones such as air pollution and sand-storms. They require different sectors of society and neighboring countries to work together.

Over twenty years ago, the Commission on Global Governance produced a report which emphasized the distinction between the security of states and the security of peoples [31]. Twenty years later, the security of peoples has gained momentum. This is also true in China, the most populous country in the world. China’s practices have considerably reinforced the overall trends of affirming the value of people, protecting their lives, whilst pursuing legitimate interests and dignity, and empowering them not only to survive but also to live a respectful life. What is happening in China is indicating a positive trend in this direction.

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Book Review

A Review of ‘New Explorations into International Relations: Democracy, Foreign Investment Terrorism and Conflict’

Published: 15 September 2016

Keywords: empirical research; foreign policy; foreign affairs; international relations (IR); negative results reporting

New Explorations into International Relations: Democracy, Foreign Investment Terrorism and Conflict
Choi S-W

The University of Georgia Press: Athens, GA, USA. 2016
336 pp.; ISBN: 978-0-8203-4908-4

Author and Scholar Seug-Whan Choi’s “New Explorations into International Relations: democracy, foreign investment, terrorism and conflict” serves as a nexus of interdisciplinary analysis and findings rooted in evidenced based research. Indeed, the author set out to challenge and test traditional international relations (IR) theories by implementing rigorous scientific methods in an attempt to produce policy recommendations and encourage a frameshift in methodological approaches. One underlying theme that recurs throughout this work is the requirement for rigorous statistical analysis and education in the field of political science. This has already begun and a re-emphasis is encouraged and greatly welcomed.

More specifically, the author unpacks the often used term empirical analysis, highlights some shortcomings to this methodology and then offers solutions and stopgaps to mitigate potential pitfalls in future research. Surprisingly, there is still room to describe and offer original insight into the causes and effects of civil war and social unrest, terrorism, democracy and flows of investment. This interdisciplinary approach offers cross-cutting themes to be addressed and some revolutionary ideas based on evidence. Choi is able to systematically upend some very well established political science, economic and international relations conclusions that were based on empirical study through rigorous scientific and statistical methods; leading to new findings, sometimes the opposite to those found in

the original works examined. At other times they open up new territories altogether.

I think it is telling that the chapter on democratic and capitalist states and war and peace turns conventional conclusions of current security paradigms on their head. Furthermore, by challenging the paradigm of democratic institutions and policy outcomes, researchers and decision makers alike will be encouraged to apply rigorous methods to current and future policy, and most importantly the trial and error of replication study. From a methodological standpoint, this text helps show common pitfalls and relatively simple means to mitigate failure of accurate interpretation of multiple data sets of information. Choi also aptly raises the call for replication studies and null results reporting/scholarly papers, against the status quo, and encourages a permanent fixture of replication in scientific progress. A difficult feat, but greatly needed.

And if statistical analysis and rigorous scientific research methods and interdisciplinary study offer no interest to the potential reader, Choi finally unpacks general patterns of political phenomena and their attributes. In particular, the discussion on outliers pays attention to an area often overlooked and its impact on general conclusions reached in empirical study. But don’t be put off by the many tables of data, statistical terminology and overall perceived headiness of this text. It is very tangible and would make ideal reading for the multidisciplinary undergraduate, graduate student, post doc and established academics alike - the need for rigorous, open and reproducible results in any discipline needs to be the mantra and battle cry of best practices and Choi makes a very good effort on this count.

Later in the text when rule or law versus democratization are discussed, another example of how data can directly relate to foreign policy (evidence and non-evidenced based) are reviewed. Discussion of civil-military relations unpack some interesting data on how it may relate to terrorism and other factors.

Some critique may also benefit this work. Specifically, in adding to, re-analyzing and manipulating data already reported and analyzed, ethical considerations should be clearly defined. In dealing with any data sets, human related or otherwise, it is easy to have 20/20 hindsight but difficult to carve ahead and be entirely unique or novel. Perhaps this work would also benefit from taking its own medicine and be reproduced in and of itself; to replicate a replication study. There will be harsh critique of some of the conclusions and findings featured in this study, but one theme cannot be

attacked: statistical analysis and reproducible study are the only path to evidence based policy and must be the beacon of IR and political science study.

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