International Political Sociology (2016) **10**, 75–96

Collective Discussion

Ferocious Architecture: Sovereign Spaces/Places by Design[1]

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The authors in this collective discussion engage, disaggregate and unpack the triangulation of security, technology and architecture, across a range of contemporary spaces/places. Reflecting diverse interdisciplinary commitments and perspectives, the collective discussion considers security, technology and architecture in urban environments and global/local interfaces, borders, borderlands and ports of entry, and even the sensorium, from soundscapes of the airport to teargas laden environments. From quotidian to high-tech, these interventions tease out the increasing ferocity of architecture and/in its relationship with technology and security.

> For every bomb that falls on Iraq, it seems 20 bollards (generally with little actual defensive value) are added in front of yet another high value target at home—status symbols (Michael Sorkin 2008, viii).

The organization and disciplining of spaces and places are eternally possessed of a visceral and material dimension and have, to varying degrees, received the attention of International Relations (IR) scholarship. Whether the walled cities and castles of the Middle Ages, or the street grids of a modern city like Chicago, the material organization of space and its architecture and design, is at least in part a manifestation of the perceived contemporary imperatives of security, economy, society. and even public health and other biopolitical imperatives. As James Scott's (1999) famous text, *Seeing Like a State*, eloquently and convincingly illustrates, state-centric logics of order and discipline have had long-standing impacts on the organization of human habitation, at times even attempting to discipline nature. However, Scott's account is, in the end, one of failure—of how the state-centric logic of ordering and (often colonial) administrative rationalizing generally ends in disaster. In spite of Scott's persuasive analysis, state and market rationalization and colonial tendencies to "deliver" sovereign logics of security, discipline, and order remain.

The collection of interventions that lay before you raise compelling questions and critical commentaries on the relationship among security, technology, and

[1]Many thanks to Javier Duran and the Confluencenter for Creative Inquiry for allowing Ben Muller the time and space to see this project to fruition.

[2]Ben Muller brought the different authors together and edited the collective article.

Muller, Benjamin et al. (2016) Ferocious Architecture: Sovereign Spaces/Places by Design. *International Political Sociology*, doi: 10.1093/ips/olv002

architecture in a range of contemporary spaces/places, and in particular manners. In an attempt to disaggregate and unpack the triangulation of security, technology, and architecture, the authors focus on a range of specific sites of analysis from Iossifova's and Nowek's varying analyses of urban environments and global/local interfaces, to Mutlu's, Frowd's, and Johannes' differing accounts of borders, borderlands, and ports of entry, and on to Cooke's and de Larrinaga's interventions on even the deep sensory spaces of sound and smell, or the watery eyes of a teargas laden environment. They raise new directions for research that at once reflect the contemporary "material turn" (e.g., Salter 2015)—particularly notable in the fields of International Political Sociology (IPS) and Critical Security Studies (CSS)—and also deep trans-disciplinary outlooks from well outside traditional IR scholarship, such as Science and Technology Studies (STS), Geography and Urban Planning, and Borderlands Studies. Contributing to and engaging with the material turn, these critical interventions also invoke the "architectural turn," raising compelling questions about design and space, exploring the complexities of the aural and olfactory sensorium insofar as they are impacted directly by the security, technology, and architecture triumvirate. Many authors with whom the architectural turn is associated—not least Leopold Lambert (2012), Gaston Gordillo (2014), Eyal Weizman (2007, 2014) and even recent commentary by Derek Gregory (2014)—focus on the destructive, violent capacity of architecture, and its instrumental use as a political weapon (notably Gordillo 2014), often examining spaces of exception such as the occupied territories in Palestine where the architecture has "forensic" dimensions (Weizman 2014). As such, the architecture takes on a sort of "ferocity," not at all unrelated to Spivak's (2009, 91) comments on the ferocity of the colonial state in its "ferocious re-coding of power."

Whether the quotidian disciplinary regimes of the long-standing use of bollards on city streets, or what Sorkin (2008, viii) refers to as the post-9/11 "bollardization" of public facilities "festooned with CCTV cameras" and a plethora of security technologies, the contributors to this article tease out the ferocity of the architecture. This ferocity is sometimes concealed through technology or the neoliberal marketplace, sometimes ubiquitous in the natural environment—such as in Johannes' technopolitics of the Sonoran desert landscape—and sometimes only noticeable through the most careful observation, concealed in Cooke's soundscapes of the airport customs hall. As evidenced through de Larrinaga's brief genealogy of tear gas, following from Spivak's comments on the colonial dimensions of the ferocious re-coding of power, these technologies, securitizations, and architectures also regularly have colonial roots, if not colonial tendencies. The contributions here tell stories not often heard in the realm of IR, but which are directly relevant to contemporary global politics. In particular, the contributors all demand that we take seriously the complex assemblage of securitizing and militarizing trends, the allegedly necessary reliance on digital surveillance and identification technologies (among others), and an overarching co-commitment to neoliberalism and exceptionalism (or some amalgam of both, e.g., Ong 2006). Through an examination of the triangulation of architecture, security, and technology, this article emphasizes the need for more sustained engagement with this ferocious entanglement, an entanglement increasingly integral to contemporary global politics but habitually left outside traditional IR analysis.

Reliant on the amplification and expansion of identification and surveillance technologies, contemporary borders and bordering practices have come to be part and parcel of the current exceptional "signature of power" (Dean 2013; see also Agamben 2009b). The provocations and interventions in this article engage the ferocity of this contemporary signature of power directly, where enhancing both mobility and immobility through the simultaneous deployment of sovereign power and market power has become commonplace. As Dean states in his analysis

of the contemporary signature of power: "the key form of the signature can be broadly expressed as the relationship between sovereignty and reign, on the one hand, and economic management and government or governance on the other" (Dean 2013, 14). Whether the blurred lines between the police and the military in the strategic and burgeoning use of teargas, or the proliferation of databases and social sorting techniques at (and away from) borders and in bordering, as well as the regular suspension of law for the sake of enhanced law, the ferocity of the signature of power is ubiquitous. As architect Ronald Rael notes, erstwhile Homeland Security Secretary, Michael Chertoff, expedited the construction of the wall along the US–Mexico border by waiving or suspending some thirty different laws, including those tied to the protection of the environment, wildlife, and Native American land claims (Rael 2011, 76). In very real terms, this sort of ferocious architecture of the border wall was designed to specifically challenge the politics of the borderlands itself.

Architectural design can also be motivated by the need to provide emblematic and seductive escapism, concealing its commitments to particular orders, violence, and even ferocity. Most notably, as Boddy points out, while architecture is an inescapable political art, it is sometimes politically compelled toward an architecture of reassurance, notable in the architecture of Disneyland in which comfortable small "c" conservative values are reinforced in an uncertain world. Disney's synthetic status—manifest in Walt Disney's own concept of "Imagineering = Imagination + engineering" (Boddy 2008, 280)—is no more synthetic than the violent colonial borders of the nation state, ferociously recoding postnational tendencies and postcolonial challenges; rebordering par excellence or, as Agamben suggests, the border as apparatus, "a set of strategies of the relations of forces supporting, and supported by, certain types of knowledge" (Agamben 2009a, 2).

Ferocious architecture of/at the border is a precise example of this signature of power wherein the exceptional and discretionary power of the sovereign is most bare, while the alleged necessities of global capital, neoliberalism, and global governance are also particularly evident. Re-imagineering the border into the iBorder allows the "futuristic optimism" essential to Disney's original notion of Imagineering to emerge, co-existing with the exceptional politics of the camp and bare life. In some sense, the politics of the emerging iBorder is captured in graffiti artist Banksy's infamous pre-*Dismaland* 2006 Disneyland prank, where he placed a life-sized replica of a Guantanamo Bay detainee inside the "Big Thunder Mountain Railroad" ride.[3]

Much like the bizarre juxtaposition of the ersatz Guantanamo prisoner alongside the theme park optimism, escapism, and roller-coaster-induced screams, would-be migrants enter into secondary inspection at a new US border facility in Blaine, Washington. There they are subjected to the biopolitical tattoo of the biometric US-VISIT system, in some cases undergoing invasive searches, seizures, and even incarceration, all within the calm, futuristic optimism of the Apple store design aesthetic. Bare life sweats under the stress of the inquisition while staring up at the ethereal, swirling art glass of Seattle artist Dale Chihuly, in what designers un-ironically refer to as "fly beneath the radar architecture." As one article notes, the architecture makes the building and secondary inspection "look more business like rather than intimidating" (Russell 2011), underscoring the manner in which certain types of knowledge are valorized within this new apparatus of ferocious architecture at the border. An article describing the facility goes on to point

[3]Banksy managed to place a life-sized mannequin, which looked like a Guantanamo Bay detainee, into the ground's Disneyland ride. It remained for approximately ninety minutes before the ride was closed down and the figure removed. Artist Banksy Targets Disneyland, BBC News, September 11, 2006. Available at http://news.bbc.co.uk/2/hi/5335400.stm, accessed May 1, 2015.

out: "Bohlin has methodically stripped away what's unessential, making a place that protects people while treating them with dignity. Here, in a distant corner, he's created a poetic meeting of the continent's western edge and the sea" (Russell 2011). Geography tamed; life made bare. Certainly a very different account of a border facility than the sort one finds when describing the virtual fence of Boeing's colossal costly failure, Secure Border Initiative (SBI) along the southern US border, or the visceral and violent wall that reinforces a mythological divide in the midst of a robust mobility corridor in the Sonoran desert between Arizona, USA and Sonora, Mexico. The analyses provided here take up this challenging vision, unpacking a range of ferocious, material manifestations of what some refer to as the security, technology, and architecture triangulation of contemporary political life.

Brutal Transformations/The Expulsion of the Ordinary[4]

In recent years, long-term urban residents and a growing number of migrants from the countryside—once carefully separated from each other by meticulous mobility controls—have come to share urban space in China's cities. They live side-by-side in rapidly segregating and clearly demarcated urban territories, some designed for the rich, others appropriated by the poor. As China embraces the most ruthless modes of neoliberal urbanization, the ordinary—the unspectacular, the common, the unpretentious—in all its guises and permutations seems hastily expelled from the urban realm. Day by day, swaths of urban land are cleared of old homes, small businesses, and ordinary people to make space for supposedly extraordinary new residences, global corporate headquarters, and an emerging class of cosmopolitan consumers.

Building on Marxist thought and Lefebvrian philosophy of the production of space, critical scholarship speaks of "global gentrifications" (e.g., Lees, Shin, and López-Morales 2015) and even "domicide" (Shao 2013), urging us to mourn the death of the city and the vanishing of the poor, the old, and the ordinary. Scholarship, similar to current journalistic trends, seems ever more embroiled in a kind of academic exceptionalism. Increasingly preoccupied with the extraordinary, we appear to discard familiar concepts as we proclaim the death of buildings, architecture, public space, the urban (Till 2009; Minton 2012; Brenner 2014; Cairns and Jacobs 2014). Frequently, however, our conspicuous assertions continue to breed on the theories and, worse, ideologies of the past. This brief contribution, therefore, based around an instance of "ferocious architecture" in changing urban China, is also a call for a more nuanced analysis, a return "to 'ground level' as a way of de-theorizing, or destabilizing master categories and powerful explanations, in order to re-theorize" (Sassen 2015, 176).

Space limitations prevent us from picking apart predefined concepts or developing new explanations as we ask here if alternative readings of urban processes in China are possible. The main concern is with the alluring idea of "ferocious architecture," which denotes the carefully designed architectures of demarcation, isolation and, ultimately, "expulsion" (to borrow Sassen's (2014) powerful term) of the unwelcome and ordinary from the urban realm. This section looks at one instance of "ferocious architecture," a particularly brutal intervention in Shanghai (discussed in more detail in Iossifova 2009, 2015), drawing on an understanding of resilience as the ability of a system to withstand disturbance and continue to function, albeit in an altered state (Gunderson and Holling 2002).

In Shanghai, as elsewhere in China, housing options for rural-to-urban migrants are often limited to the urban villages and old neighborhoods slated for

[4]Each section has been written by a lead author. The lead author of this section is Deljana Iossifova.

Figure 1. Work-live Arrangements behind the Concrete Fence. Shanghai, 2008. Photograph: Deljana Iossifova.

demolition and redevelopment. Where they are "self-employed," migrants often create informal live-work arrangements to ease their financial burden. Long-term urban residents and local governments are usually not in favor of such makeshift solutions, especially where they are seen to impact negatively on the image of the city or the value of the neighborhood. In preparation for China's two recent mega-events, the Beijing Olympics 2008 and the Shanghai EXPO 2010, Shanghai frantically implemented measures to control and hide from view its poor populations and their impoverished living quarters.

In one inner-city neighborhood, Caojiacun, a regulation was introduced to prohibit the use of commercial rental units as living spaces in order to prevent the ordinary practices of everyday life (cooking, washing, talking, and drinking) from spilling onto busy streets at all times of the day. When this proved ineffective and impossible to control in the long term, the local government erected a two-meter high concrete fence—reminiscent of grim precedents in recent European history—in front of live-work unit facades spanning the full length of a street (see Figure 1).

This intervention had an immediate effect. Cut off from the street as well as from their clients, numerous tenants were forced to pack their belongings and find alternative rentals elsewhere—out of the city, even if only temporarily. Families were torn apart as young parents struggled to make ends meet, sending small children to stay with relatives in the countryside.

However, despite deterrence efforts from above, tenants proved unexpectedly resilient in the longer term. Shortly following the intervention, those who had stayed put began to experiment with the materiality of the concrete structure to allow access from the street, creating temporary openings by removing single poles. These could be put back in place quickly to satisfy patrolling police. With time, poles were stored away more permanently and replaced by wider openings

Figure 2. Resilient Work-live Arrangements Accommodating the Concrete Fence. Shanghai, 2014. Photograph: Deljana Iossifova.

and metal gates. Then, once the stream of tourists and visitors in the city had abated, some tenants ventured to remove poles and gates for good. Others followed their example. The ordinary practices of everyday life spilled onto the street once again. Four years after the initial construction of the fence, hardly any trace of it was left (see Figure 2).

The ordinary, here, proves unexpectedly resilient, withstanding ferocious architecture in the form of a small-scale urban intervention designed to sanitize and mask to make it palatable to acquired (Western) tastes.

Is This a Story of Hope?

Just as most tenants had begun to re-establish everyday routines, they found notices attached to their front doors and shutters, informing them of the impending demolition of their units. Most had to leave in a matter of days. Second-class citizens, they were forced, once again, to pack their belongings and find alternative rentals elsewhere. The neighborhood was demolished in a matter of days. A new residential compound, high-end shopping mall attached, is currently under construction to replace it. Ferocious architecture on a larger scale?

We hesitate to declare the death of the ordinary city just yet. Fragile livelihoods and nascent conviviality are only temporarily uprooted in the name of restructuring, anticipated growth, and envisaged progress. Seemingly, alien residences and malls will gradually be transformed to become ordinary as they are occupied, inhabited, appropriated, and incorporated. Ordinary places, ordinary people, and ordinary practices, albeit dislocated, will remain part of evolving urban systems. Expulsion does not equal collapse.

An Architecture of Control: Spatial and Digital Methods of Social Sorting in the Dutch Built Environment[5]

Architecture is not dead: it is an inversion of its former self. While it has been claimed to be suffering as a profession or as a legitimate form of artistic expression for decades, architecture had generally maintained a sense of utility in the traditional sense: functional spaces with a wide ranges of aesthetics. But as conceptual developments regarding the security assemblage grow, so too architecture's role as an aesthetic and pragmatic practice diminishes. Below, we consider one physical and one digital element of the Dutch built environment as sites of the securitization of architectural design. The subconscious presence of self–sorting embedded within a simple traffic bollard and digital representations of physical space are manifestations of a state developing an understanding of a ferocious architecture.

The conceptualization of social sorting as a crucial component of contemporary surveillance strategies is nothing new to CSS. The modern surveillance infrastructure, theorized upon the foundation of the oft-referenced Foucauldian panopticon (Foucault 1977), "sieves and sorts for the purpose of assessment" (Lyon 2003, 20) inside an intricate "surveillant assemblage." This assemblage "combine[s] practices and technologies and integrate[s] them into a larger whole" (Haggerty and Ericson 2000, 610), which includes "a dispersed and distributed network of data-gathering by multiple actors" (Stoddart 2014, 34–35). While this formulation is adequate when considering a scenario wherein data is transferred from one party (i.e., the subject) to another (i.e., the agent), it fails to take seriously the broadened scope of methodologies and behaviors. Muller highlights the "biopolitical preoccupations" of an "emerging security *dispositif*" (Muller 2011, 101), but this still does not accurately or fully account for self-enforcement of surveillance practices and the potential set of reactions to deviant behavior. The quotidian elements of the surveillance assemblage are the sites of an unconscious disciplinary act. Minute architectural details, whether experienced within space or through digital mapping services, participate within this assemblage, not as devices collecting data but rather as tools to guide individual behavior.

The first example here is a ubiquitous traffic bollard deployed throughout Amsterdam. While physical barriers that separate vehicular traffic from other forms of street traffic are common to many urbanized areas, Amsterdam's traffic bollards have a unique design. These bollards, referred to by locals as Amsterdammertjes, date in some form back to the eighteenth century, with the current format being a 1.35-meter high red cast-iron pole with three Saint Andrew's crosses emblazoned on the upper portion of the bollard (Van der Stoel 1995). Primarily located in Amsterdam's most central neighborhoods, the thin bollards separate pedestrian traffic from other forms of traffic. Most commonly, this is bicycle traffic (56 percent of all trips made in urban Amsterdam; Alonso, Monzón, and Cascajo 2015, 579) and vehicular traffic; public transportation is generally located in the center of the street, sufficiently separated from pedestrian walkways.

A curious element of the Amsterdammertje is their design and spacing. The bollards themselves are fairly thin for their purpose and are sufficiently spaced out that a cyclist would easily be able to weave between them at a normal rate of

[5]The lead author of this section is Adam Nowek.

speed. In this sense, the Amsterdammertjes are not a physical barrier, but rather a widely deployed piece of street furniture which guides behavior within a particular space. When reading a street in Amsterdam which is lined with such bollards, specific types of users of the street conduct an internalized act of self-sorting: When occupying the road on a wheeled vehicle, the user remains to the left of the line of Amsterdammertjes, allowing a thin space for travel by other users traversing the space by foot. Violations of this unconscious agreement to self-sort are policed not by law enforcement agents but rather the road users themselves.

As cyclists serve as the *de facto* patrollers of these segregated spaces, their aggressive bell-ringing to publicly shame deviant street usage is an aural manifestation of how quotidian architectural elements relate to a securitization of Amsterdam's streetscape. In essence, Amsterdam's urban planning department, who are the agents of the securitization of self-sorting in the city's streets, have sought to attain public order within traffic flows by outsourcing the enforcement of sorting road users. Hostile reactions from cyclists toward a wayward pedestrian are an indication of an internalized need to self-police, where street design becomes less of a series of safety measures and more of a disciplinary tool.

While technological advances have improved the collective ability to experience spaces without actually being physically present, there is an underexamined shift taking place in how we experience the built environment. Hjorth focuses on "locative media," which includes GPS-enabled mobile device platforms such as the information-oriented Google Maps or the socially-oriented Foursquare, and how their use appears to be tautological (Hjorth 2012, 238–39): As GPS-driven social media applications inspire us to experience new spaces that would otherwise remain unexplored, our knowledge of said spaces primarily rests upon digital platforms that forgive the need to explore the built environment in person. Said services are hard-wired into the emerging security assemblage, tracking data such as search queries and attribute tagging.

The ubiquitous Google Maps is the launching point for many, but state-led censorship of particular sections of the built environment leads to the question of the genuine nature or the efficacy of using such mapping services (Zook and Graham 2007). The Netherlands has been particularly active in recent years, with certain structures being obstructed from the digital eye at certain points. One category is not surprising: strategic sites such as airbases operated by the Royal Netherlands Air Force (Vliegbasis Woensdrecht is a notable exception to the censorship, however) and Personeelsvereniging Tankwerkplaats (a tank factory near Leusden) are covered in a mosaic-like pixilation of the property, rendering them completely out of the public's digital eye. Royal residences, such as Huis ten Bosch in Den Haag and Koninklijk Paleis in Amsterdam, have alternated between pixelizations, depending on the date or the mapping service used. Certain urban areas, such as a five-block long section of the town Noordwijk aan Zee, are entirely pixelated, despite the availability of street-level imagery and the ability to physically see the censored public areas.

The selective disclosure of aerial views of the Dutch built environment via digital mapping platforms is a self-sorting of another sort. Where the physical case of surveillant self-sorting by traffic bollards in Amsterdam is a physical organization of bodies, digital mapping censorship is a self-sorting to prevent deeper inquiry. Censorship of digital services such as Google in the People's Republic of China (O'Rourke, Harris, and Ogilvy 2007) are common sights in the results pages of academic search engines, but mentions of the censorship of the Dutch built environment fails to proceed beyond superficial blog articles published by online media platforms such as Gizmodo (Biddle 2012). The Dutch state has effectively securitized the architecture of the state (or what purports to be

the architecture of the state) by censoring aerial maps and therefore monopolizing knowledge of certain elements of the built environment in the Netherlands. The response from the academy, as well as journalists, has been a disciplinary act in self-sorting, electing to not conduct further research on Internet-based censorship occurring within a highly developed European nation-state.

Where scholarship of security often fails with regards to its understanding of architecture is in its level of nuance. While outwardly ferocious architectural details are indeed worthwhile subjects of inquiry, interdisciplinary research on the intricate nature of the relationship between architectural design and security must move beyond a simplistic conceptualization of architecture as a physical barrier. The ferocity of quotidian and seemingly irrelevant pieces of the urban environment is underrated; the public realm is not only the beating heart of public life but also the site of social sorting, surveillance, identity, and ultimately where the right to the city is granted or hindered.

Rendering Border Security Invisible: Algorithms, Architectures, and Data Infrastructures[6]

Borders are not disappearing. The security function of border crossings is being rendered invisible through the introduction of algorithms, architectural design elements, and data infrastructures which hide the original function of the border. The architectural changes to border crossings that make them more appealing and aesthetically pleasing transform the aesthetics of the border, not the function. According to Hillier (1996, 15), "architecture superimposes an artistic preoccupation which, while respecting the practical and the functional, is restricted by neither." This artistic preoccupation is visible through the aesthetic changes to border crossing areas that became commonplace in the last decade or so. This transformation is especially clear in border crossings located in global airport hubs such as London Heathrow, Amsterdam Schiphol, or Toronto Pearson airports, but can also be seen in international ferry terminals and land border crossings in high volume ports of entry across the world. The physical space of the border is becoming more like an "Apple Store," with digital interfaces, minimalist architectures, and art pieces, and less like a poorly lit carceral space in between. Apple Stores are different from other computer stores because the sale function of the store is hidden. Just like a regular store, they have cash registers and checkout procedures. However, cash registers are hidden in plain sight, under the tables. And checkout can be done anywhere in the store through portable point-of-sale devices. By making the whole of the store a cash register and checkout point, Apple stores look different and aesthetically pleasing; but they are nevertheless still stores.

This is precisely the point being made here about changing border architectures. Borders still maintain their traditional sorting and security functions. It is just that they look different. And they "can" look different because of the data infrastructures and algorithms that create the necessary conditions of possibility that enable this architectural transformation.

The kind of sorting that we associate with the border now occurs behind-the-scenes, hidden away from the general public. The function and the disciplining power of the border, however, remain the same. It is only the physical space that is transforming. In other words, the border is no longer just located at the border, or even at the point of departure or port of entry. While the ultimate decision is

[6]The lead author of this section is Can E. Mutlu.

still made at the border, the control function of the border is spread to cover a much larger space/time, making the check-in attendant at the airport, the PNR databases, and the risk algorithms part of a much larger border security assemblage that determines the eligibility of the traveler. Just as the stock trading done on Wall Street is no longer actually done on Wall Street, but rather in a remote data infrastructure in the form of a warehouse in New Jersey, US border checks are no longer conducted exclusively at the JFK airport arrival terminal. For the most part, the US border is now located in a number of networked databases, which store biographical and biometric data about travelers, and border controls are conducted by algorithms that provide the traveler with a risk score, making the whole border control process less public, less transparent, and less objectionable. The invisibility of algorithmic border controls creates an aesthetic illusion of "pleasant" and "efficient" border experiences that is materialized in technological gadgets such as automated border crossings (ABCs). The immediate effects of this digitalization are visible in terms of border architectures, making them less ferocious at face value. These less public and less objectionable border practices are actually giving border architectures a different kind of ferocity, a sinister ferocity. Every day, along with millions of people, a vast amount of biographical and biometric data crosses through international borders. This circulation of data enables the transformation of the border architecture. On the one hand, border practitioners are told they can place a great deal of trust in the accuracy of algorithmic data mining and automated reasoning; they only do so reluctantly. On the other hand, travelers are forced to place a great deal of trust on private–public partnerships between states, airlines, and private security companies to respect their privacy. The border security assemblage is built on these everyday "trusts" that enable the circulation of data-doubles. While at the end of the day, the border guard working at the border still has the final say on who is allowed in and who is not, the algorithmic code that checks the traveler's risk profile against the networked database informs that decision in numerous ways.

To understand the conditions of possibility for this transformation, we must understand how the border works. Contemporary border security regimes are built surrounding a risk logic, which assumes that given a sufficient amount of relevant data, risks can be mitigated, if not managed. To manage the balance between public safety, national security, and economic welfare, border security practitioners increasingly rely on information and communication technologies (ICTs) that focus on gathering, sorting, and analyzing data on flows that are deemed high risk. Identification of high-risk flows, however, requires the identification of "normal" or low-risk flows. This, in turn, requires an assemblage that is designed to collect, communicate, sort, and analyze data on a mass scale. The more data they collect, the more accurate the algorithm becomes.

The emergence of a digital border security assemblage that enables the rendering invisible of the bordering function corresponds with what Louise Amoore calls the "Politics of Possibility." This "sees a seemingly limitless series of bodies, populations, spaces, buildings, financial transactions, tickets, movements, shapes, and forms divided and fractionated according to degrees of risk" (Amoore 2013, 7). Algorithms play a central role in this process. As codes that instruct the machines to pursue a step-by-step set of operations to be performed automatically, algorithms excel at calculation, data processing, and automated reasoning, which are all used in the context of border security to determine the admissibility of an individual prior to their arrival at the border.

The emergence of this architectural transformation of the physical space of the border crossing, however, has been in the making for at least a few decades. The introduction of biometric ePassports with Radio Frequency Identification (RFID) capabilities and the development of Passenger Name Registry (PNR) databases

are only a few of these developments. All of these changes have established the conditions of possibility for the introduction of ABCs and trusted traveler programs. In return, their introduction helped to enable the minimalist architecture that transforms the affective atmospheres (Anderson 2009) of border crossings for those trusted travelers who qualify for using the ABCs. This, however, does not mean that the affective atmospheres of borders has transformed for everyone. Those who do not meet the risk criteria are still subjected to the precariousness of the border security assemblage. Except for that, practices of detention, interrogation, and the determination of admissibility now happen in spaces that are physically removed from the "regular" border space. This "sterilization" or attention to aesthetics is sustained, in one example at the Charles De Gaulle airport in Paris, by repurposing an old hotel nearby as a *zone d'attente* or "waiting zone" for migrants waiting to be admitted or deported (Iserte 2008).

The architectural transformation of the border results in the further stratification of border experiences. Those that qualify for trusted-traveler schemes enjoy certain "services," while others remain subject to the usual intrusive and blunt checks and controls that we have come to associate with border crossings. This multi-tiered system is what makes these architecturally beautiful border crossings ferocious spaces—their politics are hidden in plain sight. The inequalities and injustices that sustain their aesthetics often go unnoticed or ignored. What makes this issue even more troubling is that this phenomenon overlaps with the privatization of airports and other border crossing areas. In these "new" border crossings, we no longer just have migrants, controls, and security checks; instead, we also have "customers," "service providers," and "screenings." On the one hand, these changes to the border crossings make them more aesthetically pleasing. On the other hand, this process is made possible by rendering the "undesirable" aspects of the border crossings invisible for many "trusted travelers" at the expense of nontrusted travelers. This trend in the long term does not improve the overall "quality" of border crossings; rather it makes them sterile or void of difference.

Architectures of Border Security in West Africa[7]

Faced with insecurity in the Sahel region, as well as pressures caused by a surge in irregular migration, the government of Mauritania has put border security high on its agenda. Border security in Mauritania, and in the Global South more generally, tends to be constituted by the language and practices of capacity-building and security cooperation. As such, it spawns new physical and institutional architectures. The Mauritanian government's project to refurbish and rebuild the country's border posts is one of the most prominent manifestations of this. This program, funded and implemented with the help of the European Union (EU) and International Organization for Migration (IOM), is part of a broader trend in West Africa toward reinforced border security through transnational cooperation. Thinking of this project and others in terms of "architecture" pushes us to think at once about the materiality and design of various sites of the international, but also about the social and institutional configurations that give them meaning.

Critical border studies literature (e.g., Paasi 1998; Rumford 2008; Vaughan-Williams 2009) tends to focus on the displacement of borders both spatially and temporally. Yet, while the border might frequently be enacted away from the territorial line, some of the most visible and imposing acts of bordering take place at a territory's edge. In short, the institutional and political architectures of the border are often materialized most consequentially in the physical ones at the border. In Mauritania's decision to build new border posts and upgrade existing

[7]The lead author of this section is Philippe M. Frowd.

ones, we see the reinforcement of physical border architectures as a key strategy of state security. The understanding of "architecture" here is in a similar vein to work on security "landscapes" (Klein 1998) and the spatial element of security practices (Coaffee, O'Hare, and Hawkesworth 2009), broadly focusing on the space, place, and materiality of security practices. Using the term "architecture" to think about Mauritania's border post project can help us think about the form of the border posts, their function, and their symbolic meaning in a way that captures not just their materiality but also the social structures of which they are a part.

In terms of form, Mauritania's program to rebuild and refurbish its border posts highlights the importance of architecture in the most conventional and literal sense. The new posts' design is based on a design jointly agreed upon by the country's national security directorate, the local EU delegation, the French embassy's security cooperation section, the German development agency (GIZ), the Spanish *Guardia Civil*, and the IOM. The physical design of these buildings is a compromise of sorts between local architectural norms and the technical requirements of "global standards" of border control. A Mauritanian architect designed the border post buildings, which fit into the style and colors of their local surroundings; yet the design also reflects the global standard of having a neat separation of incoming and outgoing travelers. Functionally, Mauritania's border posts are nodes in a technical architecture: They are interlinked and, since they host the country's new electronic entry–exit system, contribute to databases from which geographic risk assessments are produced. Finally, symbolically, the border posts represent a commitment to building up a Westphalian state: one with defined ports of entry, conforming to standards, and equipped with tools that let the state know who is entering or leaving.

Although the term "architecture" is associated with design and structure, this is not limited to physical spaces or constructions. Mauritania's border posts project is part of a larger institutional framework, and here the term "architecture" provides a useful metaphor with which to understand the growing web of entrants into the governance of border security. The term can also be used to refer to the social, technical, or symbolic arrangements—of security actors, for example (e.g., Buzan 2003; Krahmann 2003; Franke 2008; Hoffmann 2011). In the West African context, this architecture is composed of a vast array of agencies, diplomats, technologies, standards, and more. In Senegal and Mauritania, the longest standing security relations are with the former colonial power, France, which maintains well-established bilateral security cooperation through interior security attachés and military aid. Yet security cooperation now unfolds in an increasingly diverse—and sometimes competitive—social space: The growth of irregular migration and its framing as a security issue has brought countries like Spain, whose own interior security attachés have been posted in Senegal and Mauritania since the early 2000s, into the mix. Beyond this, a web of agencies including the IOM, the International Centre for Migration Policy Development (ICMPD), and Interpol operate in the field of border control, and often not in coordination. The institutional architecture of border control in West Africa is by no means the product of a single, clear design, and is instead a tapestry of overlapping interests, ideas, and actors.

This architecture is also a technical one, as West African states are increasingly brought into the informational and digital structures on which mobility and security depend. For example, the *Guardia Civil* has carried out joint patrols with Senegalese and Mauritanian security forces since 2006 to counter irregular migration by boat to the Canary Islands. Over time, Spain has included Senegal and Mauritania into its Seahorse information-sharing network, through which real-time alerts can be entered. Similarly, as West African states are increasingly adopting digital border control systems, they are increasingly connected into

information exchange systems such as Interpol's I-24/7 database. This technical and digital architecture is itself dependent on a broad range of factors that may not always align. For instance, different vendors using competing software and algorithms provide Senegal's national ID card, biometric passport, and airport passenger registration system. This should give us all the more reason to distinguish the term "architecture" from its associations with neat, purposeful construction. It is often haphazard, contested, or the result of overlapping strategies.

While the West African border security architecture's footprint is relatively broad, it is also a surprisingly lightweight one. Border control projects are not wholesale state buildings, but rather targeted interventions to improve the capacity of specific parts of the state. Interveners make relatively small investments (the EU's assistance to Mauritania on migration is only €8 million), target specific agencies and offices are often minimally staffed. In some cases, there is only one or two staff on hand to put in place the "designs" formulated in agency headquarters in Brussels, Vienna, or Warsaw. We should, therefore, not think of architecture as something that is necessarily solid, durable, or coordinated. Thinking through the lens of "architecture" allows us to consider the physical spaces (and places) as well as the social, technical, and symbolic ones that compose border control in West Africa. More than a simple analogy or metaphor, the term "architecture" analytically joins up the designs and materials of security with the social and technical relations in which they are immersed.

Border Architectures: Nature, Technology, and Humanness in the Sonoran Desert[8]

The following section reviews the relationship between human agency, the politics of nature, and the intervention of technology related to the electronic disturbance object, "Transborder Immigrant Tool" (TBT).[9] It consists of a device designed from the modification of outdated cell phones to be primarily distributed through migrants who intend to cross the US–Mexico border. The tool is supposed to facilitate navigation toward survival landmarks across the obstacles of the Sonoran desert. This borderland region has become the highest-strategized landscape for the United States' national security investments through the material and virtual fences, built since the 1990s on the base of a naturalist discourse that demands to keep "illegal migration" at bay. The measures aim to deploy digital and material nets and networks in order to locate, reach, identify, watch, and eventually exterminate the "remote" targets that constitute the mass of migrants: those who cross the border on foot—mainly to become a traceable corpus of cheap labor—and who are oddly conceived by the popular imaginary as invading the body politics of the nation.[10] TBT adjoins a triad in the architecture of a Borderscape, which is constituted by: the environment of the desert, represented and consumed as a hazard; the technology for location, surveillance, and apprehension of migrants; and the humans in the performance of crossing, who are the primary targets of operations. TBT emerges in parallel with, and in contestation of, the virtualization and militarization of the border, and its addition to the landscape consists of reordering the ruling architecture of powers. It copies the location from the state techno-operations, only to re-assemble the virtual circulation of information. By resembling the global positioning dynamics, it re-assembles actors and networks at play.

[8]The lead author of this section is Daniela Johannes.

[9]TBT was designed by the art collectives b.a.n.g. lab. and Electronic Disturbance Theater 2.0 (EDT.) at UC San Diego. See http://bang.transreal.org/transborder-immigrant-tool/ and https://post.thing.net/node/1642

[10]For an exhaustive study of the derogatory representation of the migrant population, see Hill (2006).

Homeland Security has put in practice several funneling operations since the late 1990s, with the aim of forcing migration coming from the South toward the Desert.[11] If such developments intended to make migrant crossings less appealing, they have also contributed to the gradual increment of migrant deaths (Burridge 2009; Nevins 2010.) This tactic, besides being supported by a highly militarized contingent, relies on nature as it is manifested in the landscape of the desert: Harmful and many times deadly, it strips the human of political capacities. In this context, nature is politically turned into a way of "natural selection" that blocks movement northward through the actual management of life itself. Pro-migrant humanitarian groups confront this biopolitical investiture of nature when supplying water in a landscape largely lacking it.[12] The TBT object released into this landscape enters into a relationship with these architectures and the already set up dispute of nature between two positions: the humanitarian intention to defend life itself through the provision of water and the Homeland operations, with nature as a background that serves as an alibi,[13] in that it kills by "allowing" death. Relevant for the emergence of TBT is how—as a political artifact—the object relates to the affective forces of the elements of nature. Thus, the tool engages the afflicted body that carries it with the geo-graphing of the device in a way that suggests a (bodily) response either to avoid or encounter such affects, as well as avoiding or encountering apprehension.

TBT is an attempt to re-humanize migration in a "more-than-human" way,[14] since technology is enabled as an actor in order to revert to a de-humanizing ethos. The device takes outdated Motorola and Nokia cell phones and modifies them with a virtual hiker algorithm developed by Brett Stalbaum. This algorithm traces a virtual trail through the particular terrains of the desert and orients users toward concurrent trails and water stations installed by humanitarian groups. It can work without a SIM card installed or available network service and enables GPS through a java plug-in option. It was conceived as "electronic disturbance" because it preprograms the location of other actors on scene at the border region, including Border Patrol and several antimigrant groups.[15] When the user walks close to an area patrolled by any of these agents, the device vibrates. The mechanics of TBT adds another layer of agency to the virtual geography already controlled by state forces as well as by humanitarian appropriations. It does so by directly affecting the human body, inaugurating a prosthetics for resistance. Joseph Pugliese, in his article "Prosthetics of Law and the Anomic Violence of Drones," shows the prosthetic relationship between law and technology in the context of the use of drones by the United States in war scenes. The instruments for migrant apprehension, such as the GPS devices used by Border Patrol—which copy the location of hydration points where migrants recur—work in a prosthetic manner. This same technology is resembled by TBT, in that it copies the location

[11]Renowned operations include "Operation Hold the Line" (implemented in El Paso in 1993) and "Operation Gatekeeper" (in San Diego in 1995).

[12]Many groups, such as Samaritans of Tucson and Humane Borders, have been delivering potable water stations to highly transited points of migration in the desert in order to prevent dehydration. See http://www.tucsonsamaritans.org and http://www.humaneborders.org/water-stations/

[13]Roxanne Lynn Doty (2011) describes these effects of the desert as "raw physicality," where environments have an inherent power, utilized for the ends of a masked social and political power. These biopolitics allow us to see the ways in which the assemblage of the physical forces of the desert and human death are part of a moral alibi by which the US state seeks to evade responsibility for such deaths, at the same time showing off death by natural elements as a kind of natural selection of qualifying bodies.

[14]Sarah Whatmore (2002, 4) proposes a heterogeneous geographical critique beyond the determination of social constructionism, in which social agency involves more than human interactions. The author openly aims to constructively build a theoretical commitment to "(de-couple) from the subject/object binary such that the material and the social intertwine and interact in all manner of promiscuous combinations."

[15]These include civil patrols, such as Halliburton and Minutemen.

of such navigation tools for apprehension as an act of re-assembling the relations of power.

In this scenario, the TBT object reverses governmental machinery for surveillance conceived as removal. On the other hand, it claims such a territory as an accessible landscape through the agency of technology. By allowing identification of threats, it also works as a geo-informatics and locative media, driving digital-physical convergence, such that it affects and pervades the bodies that cross with it and the landscape in several ways, one of them being converting the bearer (of the tool and of the human rights) into open digital data. As the data-bodies interlock with physical locations, a digital territory and its operative border logics, they join another assemblage, a global-locative network.

The TBT project brings about the capacity of more-than-human bodies for the recovering of a political ability by those who have been deprived of it in the act of crossing the border. Technology can be seen as an attempt to redraw power over a geography that is affected by the action of nature and its political implications. Adding a new agent to the architecture of a securitized landscape, the TBT project brings back humanness to this composition, precisely by highlighting a more-than-human instance. The prosthetic character, which spans from the technology of the object, mirrors and resists the prosthesis of border control operations. It allows us to observe how power is not autonomous, as we see it stocking up from nonhuman agents, including technology and nature. While such nonhuman powers may have been seen as innocent forces of destiny, machines, or nature, the agency of objects such as TBT evidences how more-than-human is contingent to human empowerment. While the border is controlled and securitized through technologic practices that graph the geo and the human, electronic disturbance instances calls for a critical disturbance in order to humanize the conversation on migration and border architectures.

Noise, Discipline, and Silence: Aural Architecture at Pearson International Airport[16]

Interpreting and interacting with architecture depends upon a subject's identification, processing, and understanding of a building's geometries and access points. By taking stock of these visual references, observations about architectural ferocity unfurl. But to *hear* architecture extends how we understand that ferocity. Inspired by fieldwork conducted in the security inspection area of Terminal One at *Pearson International Airport*, this intervention traces the modalities of discipline, obedience, and control rendered by ferocious architecture through the presence of acoustic noise. The physical architecture of the inspection area intensifies sounds transpiring within, thus manipulating travelers into silencing their mind by overwhelming the auditory cortex—the part of the human brain that plays a primary role in assisting someone in successfully navigating unfamiliar terrain. Informed by *aural architecture*, the aural-spatial dynamics of the security inspection space connects to literature on the politics of sound and silence to demonstrate that the presence of excessive, reverberating noise disciplines the traveler in remaining quiet and attentive as she traverses the inspection space.

Aural Architecture, an approach coined by Barry Blesser and Linda-Ruth Salter within the field of acoustic ecology, explores how architectural space affects human behavior through sound—a study exploring the composite of surfaces, objects, and geometries (Blesser and Ruth-Salter 2007, 2, 63). These physical dynamics are meaningful objects of study for the ways in which they condition sounds in a room, thus shaping what a listener hears (Blesser and Ruth-Salter

[16]The lead author of this section is Thomas N. Cooke.

2007, 22–23). As sounds reverberate (the prolongation of a sound, or its resonance) off of the different materials in an enclosed space, and depending upon the variability in sound-absorbing co-efficient of the materials themselves (i.e., woods, ceramics, glass, and steel), the ability for human ears to detect, recognize, and make sense of sounds depends upon the discernibility of each sound (Blesser and Ruth-Salter 2007, 11–12). The interpretation of each sound also affects the listener's body state. Although there is always a neurological reaction to sound that prompts changes to a listener's body state, listening is not universally experienced. While there are indeed sociocultural and individually socialized resiliencies to certain kinds of sound—particularly loud, abrasive, and indistinguishable sound—acoustic ecological logics contend that the presence of *excessive* acoustic reverberation garners powerful affective responses that often transgress said resiliencies (Blesser and Ruth-Salter 2007, 12–13). Simply speaking, and although some individuals may not be as affected as others, excessive reverberation is generally perceived as unwanted sound, or *noise*. And noisy spaces burden the auditory cortex—the part of the brain tasked with locating sound sources in an attempt to reduce the room's structural ambiguities (Stocker 2013, 11–16); the presence of excessive noise disorients an individual, making her sense of time, movement, and situation difficult to comprehend (Blesser and Ruth-Salter 2007, 63).

As there is always background sound in any space, tracing the agential capacity of noise involves the perceptibility of quietness in a room for the ways in which it frames the listener's affect and emotion (Stocker 2013, 10–11). For example, corporations intentionally design acoustic spaces with subtle electroacoustical background sounds (Westerkamp 2011, 10–11), and governments have quelled political resilience by amplifying authoritarian rhetoric in streets and homes (Birdsall 2012, 12–13)—even completely obfuscating a listener's perceptibility of background silence through sonic weaponry such as those found at sites of protest (Goodman 2012). To comprehend the politics of sound and silence in a given spatial arrangement thus involves taking stock of the degrees of variability in perceivable background sound. It also requires distinguishing who and what controls, generates, and/or manipulates these sounds. However, the security inspection space of Terminal One at *Pearson International Airport* cannot be reduced to a constant, linear level of perceptible background sound controlled, generated or manipulated by a single actor. It is the abundance of sound events reverberating inside the space that inherently characterizes the listening experience as exceedingly ambiguous. The politics of sound and silence in the inspection space begins not with an observation over intentionally sustained noise, but by the contingent nature of the sound events trapped within the space itself. What unifies logics of aural architecture with literature on the politics of sound and silence is thus the way in which differentiated ranges, sources, and intentions of sound perform in a way that overwhelms listeners in the room.

The selected inspection area in Terminal One of *Pearson International Airport* in Toronto, Canada is a trapezoid-shaped enclosure, where the entrance connects to its walls via two right angles, and the third acute angle straightens-away to the exit corridor leading to the international zone. The entrance and longest adjacent walls are comprised of glass partitioning fixed by aluminum studs. The opposing, paralleled wall is structured by removable, modular wall sections. The room is approximately seventy-five by fifty feet in surface area, or slightly smaller than an American regulation-sized basketball court, with ceilings approximately twenty to twenty-five feet in height. The inspection area is comprised of lay-in ceiling tiles and ceramic floor tiles. While some of the softer components (such as the wall sections and ceiling tiles) tend to be engineered with sound-proofing and reverberation–eliminating properties (Sabine 1993), other harder surfaces (such as the glass walls, aluminum studding, and ceramic floors) tend to reflect sound back in toward the room (Garai 1993). The acoustic dynamics of this architectural

space are further complicated by the presence of numerous objects such as carry-on luggage and body scanners, computers, hundreds of plastic bins and the moving bodies of security guards, the occasional presence of K9 units, and travelers themselves.

Travelers' auditory cortexes are bombarded by the movement of personal items in plastic bins, the mechanical function of conveyor belts inspecting luggage, and the electroacoustic sounds of computer technologies. As the auditory cortex attempts to organize these sound events to mitigate further confusion and distraction, the traveler may experience subtle increases in anxiety levels, thus instantiating perceptions of the room as noisy (Stocker 2013, 12–13). The most important implication is the simultaneous silencing occurring within the traveler's mind. As the traveler traverses the inspection space, her perceptibility of the background sound level of the room is framed by the anxieties emerging from the ambiguous, contingent, and differentiated nature of sound events around her. The role of the auditory cortex is thus to aurally chart the room to assist the listener in understanding and navigating her physical surroundings. Below the layer of conscious thought and inner dialogue, the brain's various cortexes dialogue with themselves as a means of internalizing, processing, and acting upon various stimuli (Connolly 2002, 168–69)—a system of instinctual communication that keeps the body healthy, defended, and aware. As excessive noise stimulates the human brain, the auditory cortex demands silence from the listener so as to keep the body alert and attentive. Each time a traveler directly interacts with security guards and body scanners in the inspection space, the auditory cortex's focus on interpreting the noisy environment is interrupted. The auditory cortex temporarily shifts its focus to interpreting and processing the dialogue at hand. The corresponding levels of anxiety accompanying the auditory cortex as it is taxed by interpreting numerous reverberating background sounds underlay the dialogue between the traveler and security guard (Blesser and Ruth-Salter 2007, 18), thus further compounding changes in the traveler's body state.

While *aural architecture* can be utilized to understand the complex dimensions of state architectural ferocity, alternative and oppositional claims surrounding the agential capacity of silence are taken for granted. Silence as resistance, nondisclosure, or refusal to cooperate—such claims are not self-evident modalities of political expression for individuals traversing inspection areas, nor are they readily accessible avenues for conceptual inquiry through the approach chosen for this study. Herein lay an opportunity for interdisciplinary work to explore the agential capacity of silence in relation to architectural space—particularly those whose reverberation characteristics are designed to mitigate background noise in the name of unique listening experiences, such as in the stalactite cave of Jeita or the *Pisa Baptistery*. Explorations therein constellate new intellectual avenues for theorizing how aural perceptions of enclosed spaces invigorate novel opportunities for conceptualizing the politics of architectural design.

The Spaces of Teargas and Contentious Politics[17]

Teargas is *im*material in some senses and, as a nonlethal weapon, its relationship to sovereign power—the power to suspend the law and to decide over life and death—is ambiguous at best. However, if one engages with teargas as a technology of governmentality—as "material tools that bring subjective technologies and political technologies together to bear on both bodies and places" (Anaïs 2011, 546)—it is possible to understand it as providing a potential contribution to our

[17]The lead author of this section is Miguel de Larrinaga.

understanding of security, architecture, and sovereign spaces. Teargas has a spatial history or, more specifically, a history of an engagement with space that is related to the strategies and tactics behind its deployment and to the rationalities of its use. Moreover, teargas can be seen as an object that binds forms of power together. Through the history of its development and deployment, this technology assembles biopower with sovereign power in particular ways. Teargas can be seen as being conducting through the management of space and working on bodies in particular ways. Moreover, it does so by stealth as teargas is evanescent; it transforms and shapes space for a certain amount of time before it dissipates and disappears without a trace.

Influenced by the work of Foucault around governmentality, this section examines teargas as a technology produced by assemblages of particular forms of power that concurrently contribute to making particular forms of governance possible. Moreover, if the relationship between teargas and space can be understood in relation to the "conduct of conduct," then it is also about "counter-conduct" or, as Foucault (2007, 200) would depict it, "the sense of struggle against processes implemented for conducting others." Teargas participates in the mutually constitutive relationship between government and protest in ways that highlight both the dissemination of power and the possibilities of resistance (see Death 2010, 236). In examining the role of teargas in this relationship, this contribution provides a preliminary point of entry into the literature on contentious politics. The piece concludes with a set of questions related to contemporary uses of teargas.

In his introduction to *Foams*, Peter Sloterdijk traces the use of poison gas from World War I to the gas chambers of Nazi concentration camps. The specific spatial evolution he identifies also illuminates the evolution of teargas use. In this progression, the passage toward enclosed spaces is central in moving from what he calls "atmosterrorism" (the targeting of an enemy's environment rather than their body) to the exterminism of total war. From the open spaces of the use of chemical weapons and the science of "military climatology" that accompanied it (Sloterdijk 2009, 45), chemical weapons then "move indoors" in their peacetime applications as well as their use during the World War II as an instrumental factor in the Final Solution. The specifically spatial argument that Sloterdijk makes in relation to this move toward the interior enlists the thinking of Canetti. It understands death by gas as an example of the modern occluding the cruel aspects of its own operation by "that sentimental law of modernity that prescribes maintaining public space free of acts of manifest cruelty" (Sloterdijk 2009, 55). As will be argued below, in contemporary uses of teargas, it seems that this law has reached its limit.

In some ways, the history of teargas runs parallel to that of poison gas while its spatial aspects simultaneously run in the opposite direction. On the one hand, the history of teargas *is* the history of poison gas in that, although the lachrymatory properties of a number of chemical compounds were identified in the nineteenth and early twentieth centuries (Jackson and Jackson 1935), their systematic mass production and weaponization was a consequence of World War I. Lachrymatory gas was not yet clearly categorized according to a strict separation between "lethal" and "nonlethal" weapons as one tool in the arsenal of warring states.[18] On the other hand, as a "nonlethal" weapon, the history of the use of teargas as a policing tool began in 1912 and 1913 when Paris police used it to smoke out barricaded criminals (SIPRI 1971, 212; Jones 1978, 152). In the British case, this type of use in enclosed spaces was also initially granted to the Inspector General of Police in Punjab in 1932. Teargas only moves outdoors, as a method

[18]In fact, their initial deployment and use by the French in August 1914 became a source of contention after the war. A number of German authors interpreted this event as the first use of chemical weapons of the war, eight months before the infamous German chlorine gas attack at Ypres on April 22, 1915 (Jones 1978, 152).

of crowd control, much later and, at the outset, solely in colonial contexts. After a number of permissions were granted throughout the 1930s, its actual use in riots did not occur until 1939 in Burma (Shoul 2008), followed by Northern Rhodesia in 1940 and Bombay, India in 1942 (Waldren 2013). It was only much later, in the late 1960s, that the widespread use of teargas, as a form of "domestic" riot control, occurred in both the United Kingdom and the United States (Davidson 2006; Waldren 2013). There is also a distinction made between lethality and nonlethality in the evolution of these weapons. In contrast to the continued development of "poison gas," which sought to increase its lethality in enclosed spaces to ensure a more humane outcome in putting the intended target to death, the development of teargas moved in the opposite direction toward less toxic compounds (Davidson 2006). This allowed its deployment to conduct the conduct of populations in specific instances while, following Sloterdijk's reflection on Canetti above, keeping public spaces free of manifest cruelty or, at least, attempting to minimize cruelty.

Following this brief history, what becomes interesting is to examine how teargas use—the strategies and tactics that inform its deployment—have changed through the way in which both government and protest have constituted each other and, specifically, the way in which both have used space in particular ways. The built environment—whether the temporary barricades of global summitry or the permanent features of public squares or parks—have intimately shaped these strategies and tactics. Post-Seattle, for example, we have seen what is called a "strategic incapacitation" model in Summit protests. This deploys, as Gillham and Noakes (2007, 343) suggest, "a range of tactical innovations aimed at temporarily incapacitating transgressive protesters including the establishment of extensive no-protest zone, the increased use of less-lethal weapons, the strategic use of arrests, and a reinvigoration of surveillance infiltration of movement organizations." Transgression in these contexts usually implies the breaching of a set territorial perimeter made up of fences or police lines. It is understood by sovereign power as a direct challenge to state control and is met with a number of measures, including the use of teargas (Sewell 2001, 68).

In recent years, we have witnessed changes in the strategies and aims of protest and, in consequence, new ways of conducting conduct. Two recent examples raise a number of interesting questions from the standpoint of the spatial use of teargas as a tool of governance. In the first instance, the seizure of public physical space has increasingly become a form of protest, witnessed in, for example, the various Occupy movements and the Arab spring protests, including the occupation of Gezi Park in Turkey. These protests, which are not about transgressing the perimeters of exceptional events but about transforming the use of quotidian public spaces, have been met with massive deployments of teargas where the targeted space is made completely unlivable; an instance of "atmosterror" in its most literal sense. In the second instance, the massive use of teargas in Bahrain has seen its "weaponization"—teargas is deployed, at any time of day, inside the homes of individuals targeted as activists or as against the regime (Atkinson 2012). From the perspective developed here, sensitive to questions of lethality and nonlethality and the forms of power and resistance and spatial practices that inform them, what can be asked in these two instances is if such uses are different from the use of teargas in situations of perimeter transgression? If they are, what are the implications for the distinctions between the military and police? Between war and peace? Between public and private space? One can even, in these instances, question the very existence of public space since refraining from manifest cruelty no longer seems to be an effective governor on the widespread use of teargas.

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