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51 Smart city

Abstract: We live in the age of the smart city. This brief introductory chapter outlines some of the main features associated with this profound reconfiguration of the urban order. More specifically, it introduces criminologists to some of the many challenges posed by a world shaped by urban smartness and predicated on environmental-behavioral control.

Keywords: smart city, urban smartness, crime prevention, crime–technology nexus

Introduction

As part of the 'Saudi Vision 2030 Project,' Crown Prince Mohammed bin Salman recently greenlighted 'Line City,' a hypermodern structure 170 km long but only 200 m wide that will stretch eastwards from Saudi Arabia's Red Sea coast across the desert province of Tabuk. According to the glossy promotional renderings and virtual reality videos, Line City will accommodate up to 9 million residents on a reduced infrastructure footprint of only 34 square kilometres. It will run, it is claimed, on 100 % renewable energy, produce no pollution and, because of its unique linear design, allow every resident access to all facilities within only a five-minute walk. Described by designers as a blueprint for what 'cities of the future will look like,' Line City is the latest incarnation of the smart city paradigm—a technologically sophisticated urban area that uses digital and intelligent devices, data analytics, and innovative architectural design to overcome traditional metropolitan challenges (such as traffic congestion, crime and incivility, and environmental pollution) and enhance the life of city dwellers. For futurologists and tech company boosters, urban design concepts like Line City are a cause for celebration, a manifestation of our ability to harness technology in the pursuit of human progress and environmental sustainability. For others, the Crown Prince's grandiose and almost certainly unrealizable plans for a linear city in the desert are just the latest example of the hubris of the utopian urban planner (Rennolds and Porter, 2024; Günel, 2019), only this time filtered entirely through the lens of computational and technological advancement.

From Saudi Arabia to Songdo, Stockholm to Singapore, cities around the world are being radically transformed by developments taking place under the rubric of urban smartness. It is is hegemonic in discussions of 21st-century city planning and governance such that it is now the preeminent urban ideal of our time. But while expenditure on smart urban projects is growing rapidly (estimates suggest the global smart city market will exceed $1trillion by the end of this decade, Vidyasekar, 2013), siphoning money away from more traditional forms of public expenditure, so too are concerns about what 'living' will actually mean when urban life is ultimately planned, defined, and enforced by technological systems. In particular, critics from disciplines like urban

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studies and cultural geography are worried that, by prioritizing computational prediction over-and-above the serendipitous or informal aspects of urban life, smart cities run the risk of transforming urban space into a sterile 'technological place' (Keymolen and Voorwinden, 2020), a one-dimensional, geo-fenced zone of control and coercion where the public is managed and 'responsibilized' to such an extent that individuals are reduced to unsympathetic objects of visibility and datafication (Sheehey, 2019). These and related concerns like the threat posed to privacy and liberty by intrusive surveillance (see Surveillance by Lyon), or the very real possibility that an emerging technological order will quickly fall prey to multinational corporations and private influence (Zuboff, 2019), also have obvious and very serious criminological implications. It is therefore essential that any emergent digital criminology places a critical analysis of the smart city paradigm at the very center of the enterprise.

The smart city: origins and overview

A smart city is an urban zone that uses information and communication technology (ICT), sophisticated digital data-gathering devices (such as electronic scanners, biometric sensors, and intelligent networks of connected objects and machines), and a comprehensive surveillance infrastructure to improve urban operations, manage resources, accelerate economic development, and enhance the quality of life for the zone's inhabitants (see Internet of Things by Milivojevic). At least, that's how the concept is sold. In reality, the term smart city (along with its synonym urban smartness) is better understood as a blended concept (Albino et al., 2015), combining ideas and insights from a range of different fields including computer science, cybernetics, consumerism and 'choice-based' citizenship models, artificial intelligence, management science, big data and networked informatics, environmental resilience and the 'green technology' movement, and even virtual reality and computer gaming. This broad, constitutive heritage allows the smart city paradigm to be deployed in any number of contexts to serve any number of masters. But beneath this conceptual plasticity, one (commercial) theme is always present: the accumulation of corporate profit by selling not just technology, but a utopian vision of a tech-driven, perfectly ordered, and functioning city. To understand why this is the case, one needs to know something of the historical origins of the smart city concept.

In the 1990s, the growth of computing and the subsequent massive expansion of the internet triggered a rash of new initiatives that sought to use ICT to solve urban problems. At this point, the name smart city was just one of many terms—information city, cyber city, intelligent city, wired city, knowledge city, etc.—that were being used to describe developments in this area. In these early iterations, themes like 'competitiveness' and 'economic efficiency' were often balanced alongside other key elements, such as sustainability, citizen empowerment, e-governance, or bottom-up community engagement (Montes, 2020). However, this weighting equivalence quickly tilted in favor of corporate interest. In 2008, after a decade of financial losses, the world's preeminent

computer systems company, IBM, was staring down the barrel of a global financial crisis and desperately needed something to revive its flagging revenue streams. It found it in then CEO Sam Palmisano's much publicized talk 'A Smarter Planet: The Next Leadership Agenda.' A year later they launched a multi-million-dollar 'Smarter Cities' marketing initiative, officially registering that same term as a trademark in 2011. According to Söderström and colleagues (2014), from here, IBM set about defining and promoting urban smartness through a series of publications, promotional tradeshows, and high-profile conference events. It proved an extremely successful strategy. By solidifying their position as the key stakeholder in the field, IBM were perfectly placed to first develop and then exploit the global smart city market. In particular, they discursively constructed the smart city as a place of possibility, an *open* space for playful corporate experimentation that would simultaneously enhance urban 'creativity' and encourage inward financial investment. Other companies, most notably Cisco, Siemens, Microsoft, General Electric, and later, Google's Sidewalk Labs, quickly followed suit, presenting a vision of the smart city premised on a consistent set of themes—cost efficiency, security, environmental sustainability, algorithmic synchronicity, seamless digital connectivity, etc.—all of which would supposedly operate in a neutral, non-ideological fashion. The reality, of course, was/is entirely different. Behind the sheen of openness and creative innovation was a deep commitment to profiteering and global neoliberalism (see Sadowski and Bendor, 2019), something predicted by Hollands (2008) in an early critical article that portrayed the then embryonic smart city as just another form of urban entrepreneurialism. But although Hollands was right to see the smart city as a variation/extension of the marketable "creative city" rubric, at this point he could only sense how smartness providers would come to dominate the market and the surrounding discourse. By continuing to establish and promote a corporate version of smartness, these companies ensured that, today, no meaningful alternative (non-neoliberal) smart city model exists. It is for this reason that smart cities and the various applications and developments associated with urban smartness have been the subject of both academic criticism (see e.g., Greenfield, 2013; Rosati and Conti, 2016), and more recently nascent forms of protest and urban resistance designed to check the advance of techno-imperialism.

Criticisms, criminological concerns and future scenarios

The underlying goal of smart city planners and designers is to create urban zones where every action, interaction, incident, and exchange, is surveilled, recorded, datafied, and networked. In-and-of-themselves, such practices could theoretically be neutral. For example, in countries like Denmark, Switzerland, and Sweden, where the public's trust in governments and municipal authorities is historically high, smart city initiatives like traffic flow monitoring, public transport patterning, and recycling man-

agement/processing have been rolled out without incident, with the majority of residents benefiting from these developments. However, elsewhere in the world, it's often the case that, not only do some of the technologies associated with smart cities fail to address the underlying tensions and inequalities that shape the contemporary urban order, but in some cases, they actually make the situation worse (see Creemers, 2018; Mozur, 2019). For example, in the city state of Singapore, it is claimed that the ruling People's Action Party are using smart technology as a tool for suppressing anti-government politics—so much so in fact that the Singaporean regime has been described by one commentator as a "quasi-autocratic technocracy" (see Guest, 2021). It is this aspect of urban smartness that should concern criminologists of all stripes and thus in the brief space afforded me here I set out some (but certainly not all) of the unresolved concerns and criticisms that continue to swirl around the smart city paradigm.

The first and perhaps most pressing issue is the emergence of what one might call the surveillance–smartness nexus. There is little doubt that the continued merger of sophisticated data-gathering devices (such as biometric sensors and intelligent networks of connected objects and machines) and totalizing surveillance infrastructure (e.g., military-grade Wide Angle Motion Imagery (WAMI) reconnaissance platforms (Michel, 2019) and city-wide security assemblages known as Domain Awareness Centres (Sadowski, 2019)), will bring about a reduction in the type of acquisitive street crime that frequently blights urban environments. But while we all want to live in safer, securer cities, there are growing fears that this type of techno-overwatch may come at a significant cost. In particular, it is argued that all-seeing, data-aggregating systems created from a union of surveillance and artificial intelligence will transform cities into sterile, privacy-eroding zones of control and coercion (Krivý, 2018).

Second and relatedly is the threat posed to liberty and democracy by the very real possibility that the only smart city future is one shaped and directed by multinational capitalism and corporate discourse (Sadowski, 2020). This view, shared by many critical and cultural criminologists, is encapsulated by Brunilda Pali and Marc Schuilenburg (2020) in the following quote from a recent article about fear and fantasy in the smart city: "If, however, we gaze beneath the clichés and rhetoric, the smart city appears as a 'naked king'—a commercial construct designed to sell a corporate vision of capital accumulation, which necessitates different types of surveillance to achieve it."

A third issue concerns the use of smart technology as a criminal or adversarial vector (see Cybercrime by Holt and Holt). Most obviously, by developing advanced systems of digital/biometric surveillance and pre-emption in an attempt to make 'traditional' crime forms impossible, are we simply exposing society to a new and often unanticipated array of 'technocrimes' (Steinmetz and Nobles, 2017)? These would include everything from crimes *with*, *against*, and *by* artificial intelligence (see Hayward and Maas, 2021) to the use of bio-tech body implants and transhuman ('wetware') biohacks to overcome security protocols (Goffette, 2017). Similarly, one must also consider the emerging phenomenon of the so-called 'Techlash' (Hayward, 2025). While urban smartness offers up new possibilities of situational-behavioral control, it also opens the door

to an alternative, more confrontational future that includes urban resistance and criminal destruction designed to counteract the rise of an all-seeing surveillance state (see e. g., Byrne and Davis, 2020; Luque-Ayala and Marvin 2020). This focus on political grievance and illegal actions against technology (as a material symbol of spatial marginalization or oppressive governance) rather than the more traditional criminological focus on acquisitive types of criminality/exploitation is likely to become an ever-more pressing problem for criminology—not least because anti-technology 'cultures of resistance' are already starting to crystallize (see e. g., Bonini and Treré 2023; Smith and O'Malley, 2017). In sum, by accelerating into a world of smartness, might we simply be exposing society to a largely unanticipated series of risks and system failures that ultimately could bring down the fabric of the liberal order (see Bridle, 2018)?

Finally, and here I am projecting even further into the future, concerns have also been raised that the constructivist smart city of the mid-21st century will result ultimately in the "progressive cybernetisation of urban life" (Krivý, 2018). A starting position here is Jennifer Gabrys' (2014) observation that, while the smart city is fundamentally an environmental phenomenon, it also involves an active social function in the way it transforms urban citizens into 'citizen sensors.' This process will take many forms. For example, the current obsession among tech companies and certain governments with epidermal and textile-embedded 'wearables' (digital activity recorders/transponders that are used to track humans and produce detailed spatial and physiological data trails) could potentially transform the urbanite into little more than an automated behavioral node. A less overt but potentially even more worrying development relates to the shifting nature of consciousness and cognition of urbanites. Here the argument is that, as smart citizens come to rely ever-more on the network to maintain them in "a state of perpetual safety and total security" the experienced division between humans and the cybernetic machine could potentially dissolve entirely (McGuire, 2018: 8). Through processes such as "inattentional blindness" and the "atrophying of our critical faculties" human agency is "filleted out," to use McGuire's terminology. As a result, smart citizens would lose not only the ability to govern themselves but more importantly, *the will to govern themselves* as the intensity of data-flow(s) between humans and non-human systems grows ever greater; a relational dynamic that will likely further diminish social resilience and exacerbate passive infantilization (Hayward, 2024).

Conclusion

As society becomes ever-more reliant upon smart technology, including sensor-enabled interactive devices and interconnected data architecture, we accelerate further into a world where the greater the connectivity, the greater the potential exposure to criminal attacks. However, as it stands, the discipline of criminology, despite a long and productive interest in the relationship between urban space and criminality (Hayward, 2004), has largely ignored the serious problems posed by a world increasingly shaped

by urban smartness and predicated on environmental-behavioral control. In particular, many of criminology's existing methods and causal theories, based as they are on utilitarian models of behavior and mid 20th-century notions of deviance, are often not appropriate for a world in which traditional notions of social control are being superseded by dissipative systems that curate individuals within digitally regulated and restricted terrains. This being the case, then, there is an urgent need for criminology to evolve and adapt so that it's more appropriately equipped to deal with the many challenges posed by smart cities and the various other societal realignments brought about by intelligent technology and digitalization.

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