Hacking the city of the future

Description

What happens when hackers get hacked? The headquarters of the US National Security Agency (NSA) is located between the cities of Washington and Baltimore. Amongst its many operations the NSA develops hacking tools for spying on other countries. But some of these tools leaked out, and earlier this year were turned on the city of Baltimore to cripple its infrastructure.

According to a New York Times report in May, â??For nearly three weeks, Baltimore has struggled with a cyberattack by digital extortionists that has frozen thousands of computers, shut down email and disrupted real estate sales, water bills, health alerts and many other services.â?• Read more in the NYT article.

In another story (*Wired*), we learn that â??US Cyber Command has penetrated more deeply than ever before into Russian electric utilities, planting malware potentially capable of disrupting the grid, perhaps as a retaliatory measure meant to deter further cyberattacks by the countryâ??s hackers.â?•

Computer systems are complicated, with legacy components, new and old bits of code, tangled communication routes, gateways and networks that make them vulnerable to bad actors and resourceful hackers. Overlay such digital vulnerabilities onto the arcane and convoluted structures of cities and infrastructures that have grown piecemeal over time. That gives you the hackable city.

The not-so-smart city

Contrast that image with *the smart city*. Tech scholar Ben Green summarises what the smart city is supposed to be.

> â??Through apps, algorithms, and artificial intelligence, new technology will relieve congestion, restore democracy, prevent crime, and create free public services. The smart city will be the city of our dreamsâ?• (14).

Heâ??s skeptical of course â??â?¦ the problem with smart cities is not merely that technology is incapable of generating the promised benefits but also that attempts to deploy technology in pursuit of a smart city often distort and exacerbate the problems that are supposedly being solvedâ?• (14).

Greenâ??s helpful open source book on *the smart enough city* addresses such vulnerabilities. Optimistic urbanites look to traffic flows of driverless cars unencumbered by traffic lights and signage. Such experiments turn out to pay little regard for pedestrian movements.

Automated predictive policing is meant to process police records to help law enforcers target areas where crimes are likely to happen. But that stigmatises communities, individuals and behaviours, and reinforces discrimination. It amplifies existing social problems, leading to more crimes.

Green also deflates optimistic claims about digitally enhanced citizen participation and e-governance. He provides examples with more nuanced applications of â??smartâ?• technologies, and advocates for looser, more resilient, *smart enough* interventions into the city.

Whatâ??s so smart about cities?

In case you wondered, the smart city idea embraces systems that monitor in real time: traffic, climate, pollution, health, repairs, waste, and moods. It scans, detects, surveils, maps and inventorizes, people, places, and bio-systems, via cameras, transaction records, sensors, social media streams and other sources of big data.

Itâ??s about the internet of things and responsive environments. It informs decision making about cities, and decisions by city inhabitants, in ways not yet imagined, including automated actions that donâ??t require human agents to make choices.

Such data flows foreground personal and other data sensitivities. Not least, breakdowns in these systems render not-smart-enough cities highly vulnerable, as in the case of ransomware scams. Businesses are blackmailed into paying hackers in bitcoin to restore the companyâ??s systems. Itâ??s as if some villains administered poison to their victims who then had to pay for the antidote.

Many NSA workers live in Baltimore and the NSAâ??s hacking and counter-hacking operations rebounded onto those citizens. The idea of the smart city highlights access, security and defence, and *encryption* serves as one of its weapons.

To the prospects of the intelligent, smart and the smart enough cities add the metaphors we associate with security, hacking, counter-hacking, and lock-down â?? encryption. Is the city of the future *smart*, or just *encrypted*?

Encrypted Cities

Hereâ??s a list of some interrelated themes Iâ??ve been investigating so far, with links.

- The **crypt as city metaphor** Îºï•Ï ï?ï?ï?ï? means *hidden place* (Donâ??t go into the crypt!)
- **Cryptography, architecture, printing** (The memory wheel)
- **Access codes and security** (Unlocked)
- **Combinations** (Eliminate the impossible)
- **Minimal signal systems** (One knock for yes, two for no)
- **Esoteric codes** (Trash talk)
- **Alternative codes** (Everything is code)
- **Architecture and crime** (A life of crime)
- **Bad actors** (Individual-1: Kompromat 101)
- **Secrets and lies** (Executive secrets)
- **Hash codes and anti-hacking** (Immutable data)

References

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Notes

- The picture above is of Kibera, on the outskirts of Nairobi, taken from one of the main roads that skirts the shanty town. Iâ??ve featured pictures of the town a few times. The town makes a fascinating case study: people of meagre means making the best of the infrastructures around it. I recently listened to a Digital Planet podcast featuring the author of a website Kibera Stories (kiberastories.wordpress.com). The website and its Instagram account show pictures of Kibera residents from the viewpoint of one of the residents.

Category

1. Architecture

Tags

1. ciphercity
2. encryption
3. future city
4. hack
5. NSA
6. smart city

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