Artificial Intelligence & Urban Planning

Good, Bad, or Terrifying?

/ Daniella Fergusson RPP, MCIP

"A rtificial intelligence" (AI) is an elaborate way of saying that someone programmed a computer to follow a set of procedures (an algorithm) and spit out a result. The scientific language surrounding AI makes it sound more sophisticated than it is.

Planners use algorithms every day. We follow the *Local Government Act, Community Charter*, development procedure bylaws, and other bylaws and policies. When we write zoning bylaws and official community plans, arguably, we are writing algorithms that the development community follows. The difference between a planner and artificial intelligence is intelligence. And, by intelligence I mean empathy, judgement, lateral problem solving, design thinking, creativity, context, and other grey areas that our grey matter is capable of.

With the rise of smart cities and enormous, unregulated databases of commercially-available personal information, it is important that planners understand the limits of AI and its role in discrimination.

AI "intelligence" is only as good as its source data and the parameters guiding its actions. Predicative policing offers a good example of

→ poor decision-making based on bad data. Predicative policing uses historical data on the time, location, and nature of crime to direct policing resources to places anticipated to be crime hotspots. AI reproduces the patterns that already exist in the data. As a result, rather than predict future crimes, the AI predicts policing bias based on historical policing behaviour.

In 2015, Toronto journalist Desmond Cole documented his experience of having been stopped and interrogated by police more than 50 times in Canada. His essay in *Toronto Life*, "The Skin I'm In," explains how Black Canadians are disproportionately targeted by a 70-year old controversial "carding" practice. Young Black men are 17 times more likely than a white person in Toronto to be stopped by police, and therefore are at much higher risk for arrest and imprisonment. This is done because of the current and historical bias against Black Canadians in policing.

Any AI system built on data gathered through methods that disproportionately target certain members of the community, will reflect back and amplify the pre-existing discrimination. For smart cities, this means simultaneously making certain populations both hypervisible to criminal enforcement and invisible to commercial products.

Self-driving cars, hands-free motion sensors, facial recognition technology, and more have all been documented not "seeing" dark-skinned people. The simultaneous hypervisibility/invisibility of dark-skinned people risks creating communities where machines judge people by their appearance with no human to appeal to. Even today

folks are automatically locked out of buildings, flagged for criminal activity, or run over by robot cars that can't 'see' them on the basis of nothing except the biases of the long-gone AI creators.

As planners, we should ask, "What problem am I trying to solve through data collection, surveillance, and AI?" Smart city product vendors often advertise their products, stating that sensors and software make urban life easier and seamless for individuals by optimising the deployment of public services.[1] Examples of services targeted for a seamless experience include: single-pass on-demand multi-modal mobility systems (shared bike to bus to shared car), telemedicine and remote patient monitoring, school admissions, rental applications, building automation systems, digital tracking and payment for utilities like waste disposal and recycling, and multi-agency law enforcement and surveillance. Joy Buolamwini, AI researcher at MIT Media Lab, responds by asking, "Who are we optimising for?" Who is the "we" and the "our" when talking about smart, seamless urban lives? Does that seamless, optimized future include people who are currently and historically excluded from city-building, such as people with disabilities, people living in poverty, or dark-skinned people?

More broadly, we need ask whether people have consented to data collection and whether they have access to and control over the data collected about themselves. Google's Sidewalk Labs, which has been hired by Waterfront Toronto to develop a smart city in Quayside, has stated that it does not intend to use facial recognition

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in the public realm. But it does intend to monitor in other ways. Two points most relevant for this discussion are: 1) the lack of opt-in/opt-out for surveillance, and 2) the development of unfathomably large personal information databases.

Sidewalk Labs and its subsidiaries/spin-offs intend to collect data on who goes where, when and how to optimise the delivery of transportation, power, utility, housing, entertainment, health, and security services. A few examples include:

• CommonSpace, a Jan Gehl-inspired "public life study" mobile app that allows groups of people to record data about who they observe in a public space and map that data to better understand behaviour

• Collab, a public engagement online tool for crowdsourcing what kinds of events should happen in public space

• Coord, an urban mobility tool designed to create seamless, multi-modal trips, including bike-sharing, tolls, parking fees, EV-charging station reservations and more

• Flow, a traffic modeling tool that shares city parking and transit ridership information with private companies to solve issues like Ubers dropping people off at bus stops.

Sidewalk Labs' Replica tool is the most concerning. Replica models how individual people move through a city by using "de-identified" mobile phone location data obtained from commercial databases. Many folks, likely including yourself, do not understand the extent to which your

mobile phone location data is tracked and monetized. Most people's smart phones record and share where people travel and when. Aggregating this data creates a pattern of how individuals live, who they meet with, and more. It reveals home and work addresses, children's schools, affairs, illicit drug use, and other sensitive data. By its nature, the data cannot be anonymous, and no one really knows what "de-identified" means.

Sidewalk Labs is proposing a privately-managed urban environment on public land where people are surveilled and notified about the surveillance by signs. To opt-out, one would have to avoid the area completely, or at least leave the smart phone at home. In this tracked neighbourhood, how welcome is a Black man going to feel who has been carded over 50 times? How safe is a victim of domestic violence and stalking going to feel, knowing that her every movement is being tracked in a database stored and accessed by who-knows-whom? Who is disproportionately helped or harmed by the data collection? How can people possible consent to the data collection? Does withholding consent mean being effectively banned from participating in civic life?

As planners, we need to see how surveillance discriminates, and how AI can amplify that. Jane Jacobs writes about the importance of having "eyes on the street." However, a community regulating itself by neighbours looking out for one another is not the same as public surveillance designed and led by the police or by a private ad-tech company. In the former, neighbours have

agency to discuss, create, and negotiate the rules and norms that are being enforced. In the latter, enforcement is being done to people, with little to no recourse when it happens in an arbitrary, excessive, or unjust way.

Outsourcing human "eyes on the street" to a network of sensors and algorithms has a good chance of resulting in easily justifiable discriminatory practices regarding who is allowed to be in public space. Planners need to be aware of our own history of planning which used to justify discriminatory practices, such as racial restrictive covenants, redlining, and nuisance/ticketing programs that target specific communities. Before recommending projects involving AI, we should question is AI even needed, and if it is, who audits it and governs it? ■

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[1]In case you're curious, check out all the uses of 'seamless' and 'optimization in this McKinsey report: https://www.mckinsey.com/~/media/mckinsey/industries/capital%20projects%20and%20infrastructure/our%20insights/smart%20cities%20digital%20solutions%20for%20a%20more%20livable%20future/mgi-smart-cities-full-report.ashx