

> In the field of violence prevention, the use of technology by cities has been as widespread as it has been controversial. The trend of cities relying on surveillance technology to support their law enforcement efforts will only become more commonplace as AI models increase the effectiveness of these systems. Those same AI algorithms, however, have the potential to reinforce biases and discrimination and stand in the way of due process if they are not regulated and implemented with meaningful community participation and proper human oversight.

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CHAPTER 4

TECHNOLOGY-EMPOWERED URBAN VIOLENCE PREVENTION IN THE ERA OF AI

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Context and Considerations for Technology-Empowered Violence Prevention

AI and the Promise of the Smart City

Cities have always been centers of innovation, hubs where the intersection of human knowledge, material resources, and emerging challenges have led to the development of creative solutions to improve the quality of life of its residents. With the advent of the digital age and the rise of the smart city,[1] the drive to integrate new technologies into governance, decision-making, and service provision has become an imperative. It has also brought on a series of new challenges related to the digital divide, privacy and environmental concerns, representativeness, and the emphasis on efficiency over trustworthiness.

Now, the accelerated development and proliferation of artificial intelligence (AI) have added a new dimension to this phenomenon. While AI has the potential to help governments live up to the promise of smart cities, it also amplifies concerns related to the use of technology, and it brings new sets of ethical considerations to the core of urban governance. On one hand, the speed with which AI can process large amounts of data and its aptitude to translate complex information into simple terms creates opportunities for policymakers to have a deeper understanding of city dynamics and formulate policies that get to the root causes of issues and integrate community insight. On the other hand, it can create a dangerous loop in which policymakers overrely on biased algorithms, overlook human input, and create opaque systems that replicate discriminatory and unjust power dynamics and erode trust among the population.

Honing in on the topic of violence prevention, technology—including in this definition of technology both more-traditional digital tools and the recent advancements in AI—can be particularly helpful in letting policymakers collect and analyze data at the sublocal level, allowing them to better understand the hyperlocalized dynamics that shape violence and crime trends in the city as a whole. It is also often associated with the surveillance technology that has become a prominent feature in many cities around the world. In either case, there are opportunities and concerns related to its use. What will become particularly important for the cities of the future will be to understand how to make these technologies work for the public good and how to put safeguards in place to prevent the ethical and practical issues that come along with them.

Data, Technology, and Artificial Intelligence

Three key concepts will appear throughout this chapter: data, technology, and AI. At some points, the distinction between them will be clear, at other times, less so. This is a function of their interrelated nature: At its broadest definition, AI is any type of technology that can simulate intelligence and perform tasks that simulate reasoning and problem solving. Much of this perceived reasoning comes from systems using large sets of data to predict the probabilities of an outcome.[2] Chatbots are a good example to explain how the line between what can be considered AI or not becomes blurry when discussing emerging and evolving technology. The first chatbots date back to the 1960s and used rules-based systems with preprogrammed scripts and decision trees, which were exponentially simpler than today's large-language models (LLM).[3] Only after 2023 did LLM-empowered chatbots using deep neural networks trained on large datasets become the norm.[4] Singapore's Ask Jamie is one of the first documented examples of chatbots being used

in official government websites. Launched in 2014, the chatbot was based on a rules-based system until the transition to an LLM-powered engine in 2023.[5] Thus, if at any point this chapter refers to a government chatbot, it might not be immediately clear if the technology behind the chatbot should be considered AI—and it is likely that the answer itself is not clear-cut.

Similarly, at some points in this chapter, data and data analysis will be used as examples of technology use. In its simplest definition, data refers to any observation or measurement that is collected and stored, typically for the purpose of analysis. In its most rudimentary form, it requires no technology more advanced than a pencil and paper. Nonetheless, the vast majority of researchers nowadays use technology much more advanced than that to collect, store, and analyze their data. The same is true of governments: Discussing how they use technology to improve their policymaking often means showing how they are turning to increasingly advanced tools to collect and analyze large volumes of high-quality data. In that sense, the conversation on how cities use technology and how cities use data often becomes the same, and the difference between the two concepts might become blurry at times.

Technology and the Current Geopolitical Challenges

Understanding how these technologies can work for the public good is especially important when observing the broader geopolitical context cities are having to contend with. The rise of authoritarian governments, empowered by a hyperrepressive discourse on public safety, can be a dangerous set up for the unrestricted advancement of technologies that are used for surveillance and population control. Close-circuit TV systems (CCTV) with facial recognition technology (FRT) and gunshot-detection radars are examples of the types of tools that have by many been seen as foolproof and are used to justify repressive and unchecked action from law enforcement. And it is important to note that even governments that are outwardly liberal and democratic have been called out for using surveillance technology to support repressive and discriminatory policies.[6] While these technologies can have a role in supporting police action and prosecutorial investigations, a human-centered violence-prevention strategy needs to ensure that there are regulations and guardrails to mitigate the inherent bias and unreliability of these systems (as will be explored farther down in this chapter), as well as accountability mechanisms that recognize that the technology is there to support the human element behind it and not to substitute it.

The current weakened multilateral system gives leeway for authoritarian governments at all levels to forgo human rights considerations in order to consolidate power and pursue quick wins through unregulated technology. In this context, it is crucial that cities committed to building safer communities for all take a proactive stance to ensure that the use of these tools is only one element of a holistic violence-prevention strategy that does not have the primary goal of persecuting and criminalizing specific sectors of the population.

Another point of consideration for cities is how taxing some of this technology, particularly AI, can be on the environment, with large data centers consuming upwards of 5 million gallons of water per day, which is the equivalent consumption of a town of 50,000 people.[7] In a context where the climate crisis already has severe impacts in communities across the world,[8] city officials need to consider the broader consequences of the technology they are procuring, which can exacerbate the risk factors for violence in their communities and beyond. Even when the direct effects of these technologies lead to a positive result in the community, it is possible that their indirect effects will have more severe negative impacts related to the acceleration of the climate crisis, which tend to disproportionately impact the most vulnerable populations.[9]

Data-Informed, Not Data-Driven

For the cities committed to using technology in an ethical and responsible way, there is an important distinction to be made between putting technology at the center of their violence-prevention efforts and using technology to support day-to-day action and decision-making while keeping the human element at the

core of its governance. A way to exemplify this is to analyze how cities use data to inform their decision-making, since one of the most common use cases of technology for violence prevention is in cities turning to these tools to support and enhance their data collection and analysis.

Cities should aim to be data informed when formulating their violence-prevention strategies, referencing data when making decisions, and combining that information with evidence from other sources, including community insights. Policymakers should prioritize the quality and strength of the evidence when making decisions. City officials and all of those making use of the data also need to be mindful of the context in which the data and evidence is collected, and always be aware of the potential of biases and distortions that reflect broader political dynamics. Ultimately, data is an instrument to translate the human lived experience into a quantifiable and standardized form. While this is immensely useful in understanding how certain human phenomena manifest and can be countered, it is also inherently reductive, and this reductive nature needs to be balanced by human oversight and interpretation. This data-informed approach stands in contrast to a data-driven one, which takes data as an absolute truth and lets it guide all decision-making without questioning issues related to biases, representativeness, and power structure that might exist in the data, even when it is high quality.[10]

This is an important distinction, and one that becomes even more relevant when entering the realm of predictive models and algorithm-based policymaking (as in, using AI systems to analyze large datasets and predict potential outcomes that can then be used to influence policymaking). While these systems can process and analyze data with unprecedented efficiency, policymakers must understand that their outputs will only be as precise and equitable as the data they are based on, with the added concern that the algorithms themselves can be biased in their formulations and reinforce preexisting biases in the data. This means that these algorithms have the potential to replicate and exacerbate existing inequalities if left unexamined, and that human judgment needs to be an integral part of any policy. Furthermore, as will be explored later in this chapter, it is crucial that the communities most directly impacted by these technologies, and particularly those most often misrepresented in data and subjected to biased outputs, have a central voice in decisions about the adoption and implementation of these systems.

With all these considerations in mind, there is still a case to be made for cities to integrate technology, and specifically AI, in their violence-prevention strategies, since it opens up the potential for more-effective, targeted, and responsive policies, as will be discussed in the rest of this chapter. Integrating these emerging technologies into policymaking should, however, be a well-thought-out decision, and one that results from an open dialogue with the affected communities. It needs to include safeguards and regulation from the start, and it needs to always keep the human element at its center. The section below features examples of cities that have integrated technology into their violence-prevention strategies, discusses how they have succeeded or failed in keeping their strategies human centered, and presents lessons for cities seeking to follow their examples.

Technology in Urban Violence Prevention: Lessons Learned and Opportunities for Ethical Deployment

Three Stages of Technology-Supported Violence Prevention

There are many ways technology can be an asset in policymaking, and more specifically for violence prevention. AI's potential for compiling and analyzing quantitative and qualitative data in a more efficient manner, allowing cities to seamlessly blend community insight with administrative data, adds many possibilities in terms of understanding how violence affects communities beyond homicide and robbery rates.

When analyzing how violence manifests in cities, it is helpful to think of a city not as a solid and cohesive unit but instead as a combination of microdots that come together to make a full picture, as if it were a pointillistic painting.[11] Urban violence is a hyperlocalized phenomenon, with criminology studies consistently showing that the majority of crimes happen in just a few of a city's street segments.[12] Moreover, analysis of risk factors for violence can narrow down specific segments of the population with high potential for violent victimization or offending.[13] With that in mind, to understand violence in a given urban context it is not enough to look at city-level trends. Policymakers and practitioners need to zoom in to these microdots to understand how they differ from one another and how they interact to create reverberating dynamics that impact the whole city. Only by considering each neighborhood or street segment as its own entity, with its own sets of needs and priorities, can policymakers design policies that target the areas most in need and efficiently allocate resources.

This is where technology appears as a fundamental tool for violence prevention. It helps cities to collect, process, and analyze large amounts of data from a variety of sources, with enough specificity and geospatial precision to let policymakers and practitioners visualize the violence and crime taking place in all its complexity. This data can show where violence is taking place, who are the people most at risk, and how it manifests in that specific local or sublocal context. This information allows for the design and implementation of policies that can efficiently and effectively target and allocate resources to the areas and groups that need the most, and where action will have the most widespread impact. Broadly speaking, cities—including both local governments and civil society—use data and technology to empower their violence-prevention efforts in three stages:[14]

- **Preparation:** used to diagnose a problem and to anticipate crises. This happens when cities set up violence observatories or otherwise collect and analyze data to identify trends, risk factors, and hot spots for violence to help guide efforts and improve resource allocation for violence prevention. The violence observatory in Santiago de Cali, Colombia, is one of the first in Latin America and an example for many cities in the region. The observatory is part of a broader strategy from the city that sees violence as a public health crisis that can be analyzed and treated as such.[15] Dorchester, a neighborhood in Boston in the United States, is an example of a city where academics and community organizations are collaborating to create innovative ways to understand violence. They are creating a local language model combining years of community meeting notes and interviews with traditional crime data to provide a more holistic understanding of crime in the area to both policymakers and its residents.[16] With innovations in AI, cities are also using data to forecast the impact of new policies and prepare for future crises, simulating scenarios to let decision-makers spot critical gaps and refine their responses.[17] For example, Seoul, South Korea, as will be discussed later in this chapter, has built a complete virtual replica of the city which can be used to simulate different scenarios.

- **Performance:** used to align efforts and monitor progress. This use is most clear in real-time crime centers, where police forces and other departments gather to monitor real-time data from incidents to support field action, improve cross-sector collaboration, and formulate longer-term action plans for crime prevention. Chicago, Illinois, is a pioneer in implementing this type of real-time multidisciplinary control center. Initially implemented in 2017, the Strategic Decision Support Centers (SDSCs) consist of conference rooms equipped with video feeds from a CCTV system, incident-mapping tools, and other policing software, where a multisectoral team meets to coordinate action across sectors, support day-to-day decision-making and field operation, and review previous events.[18] The city of Godoy Cruz, Argentina, by its turn, has developed a way to better integrate community input into police operations. It has developed a community-alert system that utilizes mobile apps and cellular networks to georeference emergencies instantly, while also creating a direct channel of communication between citizens, the city's Observatory of Citizen Security, and emergency services.[19] Finally, AI and digital tools can also be used to expedite bureaucratic processes and allow for faster law-enforcement response and to free up staff time for tasks that

require human intervention. An example of such is the digital platform developed in Los Angeles, California, that automatically flags when individuals under domestic violence restraining orders fail to relinquish firearms, replacing a long, multistep manual process that involved multiple departments with an automated alert system that notifies the correct agency within minutes of a violation being reported.[20]

- **Reflection:** used to evaluate the success of interventions and to learn lessons. This happens when cities put their initiatives through evaluation processes to measure their impact and inform future decisions based on the results. While emerging technologies and new methodologies are used in this stage to improve the scope of these studies and the accuracy of the results, the focus here is more on how cities are using data to improve their policies, not the technology itself. Pelotas, Brazil, for example, used the results of a full impact evaluation of their violence prevention strategy, Pacto Pelotas Pela Paz (Pelotas Peace Pact), to inform how to improve their policies. The evaluation used a synthetic control methodology to estimate what would have happened if the pact had never been implemented, which is an innovative way to overcome the challenge that many evaluations of citywide interventions face—of not being able to find one suitable control group—by using a weighted average from a pool of potential control units. The evaluation showed that focused deterrence had been a particularly effective element of the strategy, being directly linked to 38 percent of the 80 percent reduction in homicides that the city experienced in that period.[21] Based on these results, the city expanded its investment in focused deterrence, and as of the end of 2025, it had reported a 90 percent reduction in homicide rates since the start of the pact implementation.[22]

Surveillance Technology, Marginalized Communities, and Community Participation

When discussing the topic of technology and AI for violence prevention, it is unavoidable to mention the use of surveillance technology, and it is necessary to reflect on what cities can accomplish by using this technology and its important drawbacks. Over the last couple of decades, cities have made extensive use of CCTV, audio-based gunshot-detection systems, and license plate readers to monitor their territory. Over time, these systems have been updated with AI-enhanced detection capabilities, such as FRT, and capability to detect and flag crime and violent incidents.

The aforementioned case of the SDSCs in Chicago is one example of a city making use of such tools. While the SDSCs can generally be considered a successful initiative, being responsible for a reduction of 26 percent in shootings in certain districts with no increase in arrests,[23] the technology employed by the centers, as described above, has also brought on its fair share of criticism. The gunshot-detection system in particular has been the cause of contention. Although some studies have found that the system led to faster responses to gunfire,[24] it has been widely criticized for its unreliability, and for leading to the overpolicing of communities of color.[25] In 2024, the city decided to not renew its contract with the system provider, noting that it was going to assess other technologies that could serve the same function while also increasing trust within the community.[26] To date, the city has not deployed a new gunshot-detection system, but it is piloting a camera-based firearm-detection system—which has also drawn its own set of criticisms for the lack of community consultation.[27] While the interruption of the previous contract signals good will by the city to listen and adapt to community feedback, the lack of consultation is a serious misstep for a city that claims to be committed to building trust in its technology governance.

In the same vein, cities in Latin America have drawn criticism for implementing FRT through obscure procurement processes and relying on already biased police databases, with poorly defined standards in data use.[28] In these terms, the deployment of FRT technology raises questions about its legality, with serious concerns surrounding the right for privacy and nondiscrimination and its potential to disrupt due process procedures. This is a particularly contentious issue in a region where the public debate regarding public safety is divided by a false dichotomy of either being too lenient on crime or foregoing basic human rights in order to achieve fast results to reduce violence, as can be seen by

the growing popularity of the mano dura or "tough on crime" narratives and policy trajectories.[29] But even beyond any faults in the deployment of this technology, it is important to consider if there is an ethical way to make use of such and if the potential gains to violence and crime prevention are worth the risks of infringing on human rights and amplifying discriminatory practices.

As cities are faced with this question, response from decision makers around the world has varied, from outright banning the use of FRT to allowing its deployment under specific circumstances to allowing it without any restrictions.[30] While many government officials and police forces argue for the need of such tools to help tackle the public safety crisis, civil society raises serious concerns about the infringement of individuals' rights to privacy and the documented biases of the technology. Ample research supports this claim and shows that these systems misidentify female-presenting people and people with darker skin tones at a concerning rate, with error rates of up to 35 percent for female-presenting individuals with darker skin tones (compared to less than 1 percent for male-presenting individuals with lighter skin tones),[31] but other studies support the idea that FRT can contribute to a reduction in serious crimes without an increase in overpolicing and disparities across racial groups.[32] This disparity in findings shows that caution with this technology is merited, but it may be that the benefits to public safety make it worth considering its deployment if it is done with clear guardrails, proper oversight, and consistent monitoring to spot and prevent biases.

Anywhere this discussion lands, the way for cities to implement FRT in an ethical and responsible way starts with ensuring meaningful community participation, particularly of marginalized communities that have been excluded or underrepresented in the earlier stages of AI development, from the earliest possible stages of development or implementation. It is not a mere coincidence or an accident that time and time again, surveillance technology is shown to have a negative bias toward people of color, women, and other minorities. It is a function of the data they are based on, which is overwhelmingly composed of individuals with lighter skin tones,[33] and of the internal biases of the people who have led their development.

To offset this imbalance, cities need to create space for the directly affected communities, particularly when marginalized, to have a central role in the discussions about new systems or tools. The communities most directly impacted by them need to be the ones leading the conversations to understand if and how they would address their needs, assess their potential benefits and drawbacks, and identify alternative solutions. The Community, Advocacy, Resilience, and Evidence (CARE) model, developed by the nongovernmental organization Measures, is an example of a system created by women of color that offers a concrete pathway to ensure representation of marginalized communities into technology and AI governance. The model proposes the establishment of "councils of voices" within communities to help guide the development of new technology.[34] The American Civil Liberties Union's Community Control Over Police Surveillance (CCOPS) initiative is a more specific example of ensuring community oversight over the adoption of surveillance technology. The initiative advocates for laws that give local residents the right to decide on the adoption of such tools. Since its launch, CCOPS laws have been enacted in 26 jurisdictions across the United States.[35]

These examples demonstrate that communities are already organizing themselves and demanding their inclusion in these conversations. Cities that do not prioritize community participation risk exacerbating racial, gender, and other structural inequalities. There needs to be ample and meaningful public debate involving lawmakers, civil society, and the affected communities to decide on the future of these technologies, and such dialogue can only happen with transparency and access to information on both their effectiveness and downsides, including instances of inaccuracy and potential threats to human rights.

AI itself opens up new possibilities for integrating communities into policymaking. While AI's processing power lets cities accelerate the speed at which they develop and deploy new projects, it also creates the conditions for governments to make

more of their data available to the public and to let them examine in detail the output of these new systems. For example, Buenos Aires, Argentina, was the first city in the world to implement a WhatsApp chatbot to let city residents have easy access to data and information related to safety, health, public spaces, regulations, and more. First launched in 2019, and having made the shift from a rules-based model to an LLM-powered engine in 2024, Boti logs more than 3 million conversations every month.[36] In that sense, one of the most powerful ways technology can bring value to cities is by cutting down on the barriers between the government and the public and creating models for increased community participation. In turn, this can ensure that new technologies are subject to meaningful public debate before being implemented.

Algorithmic Risk Assessment and the Importance of Human Oversight

Another case that highlights some of the pitfalls that cities need to avoid when employing new technology to support prevention efforts is VioGén, an algorithm-based intimate partner violence risk assessment used by the Spanish police. Through this program, a woman who believes she is at risk of experiencing domestic violence contacts a hotline and answers a 35-question survey to assess her risk of experiencing violence in the near future.[37] After collecting the answers, the system will flag the severity of the case from negligible to severe, and this will inform the police response, or lack thereof. On a first examination, this seems like a useful tool to let police allocate constrained resources to address the cases where there is the most risk for imminent harm. According to many metrics, the system has been successful, with official data showing that since its implementation, repeat attacks have fallen to 15 percent in cases of gender-based violence, compared to the previous 40 percent rate.[38]

However, 8 percent of the cases that were considered of negligible risk and 14 percent of the cases that were considered low risk led to further harm to the reporting individual, with at least 247 women being killed by their partners after being assessed by the system since its implementation in 2007. Further examination showed that the initial system assessment was rarely reviewed by an officer and that a significant number of women who contacted the hotline were deemed no risk, neglecting the fact that the mere fact that they had been motivated to seek help should already flag their cases as worthy of attention. The lack of human interaction or oversight led to a heightened sense of mistrust by the population, and the system received widespread criticism from global news outlets.[39]

The Spanish government responded to the criticism by acknowledging VioGén's shortcomings and pledging to update the system and its protocols, including by not categorizing women as "no risk" once they have contacted the line and demanding a closer look by police officers of every entry.[40] This case demonstrates that financial investment in technologies such as this needs to be accompanied by a sufficient investment in human capacity and training to ensure that the technology is being used as an important prioritization tool but not as a sole determinant of action. While further evaluation will be needed to determine if the changes have been appropriately implemented and if they have led to an overall improvement of the system, these measures are a step in the right direction in creating a culture of accountability, ensuring human supervision, and trying to increase trust among the public.

In this case and beyond, to ensure that AI and technology are working to improve public good and increase public safety, it is critical that governments avoid the pitfalls of overly focusing on efficiency and that they also focus on building infrastructures that include safeguards, deepen public trust, and enable community participation. One important step to take is to ensure that government staff are trained and empowered to exercise their human judgment at all times, recognizing the instance where human intervention is required beyond AI processing. In addition to that, AI systems often operate as black boxes, making it difficult for government staff and the general public to understand how a given output or decision was reached. To overcome this, governments need to ensure that innovations are transparent in terms of their output and their internal processes, and they need to embed trustworthiness, not just efficiency, as a benchmark for success. Whenever possible, this means providing clear direction on how tools are set in place, how they are operating, and the results they provide.[41]

Human-Centered, Technology-Empowered Violence Prevention

Niterói, Brazil, is an example of a city that has put a strong emphasis on enhancing trust with the community and improving human capacity as it integrates new technologies in its violence-prevention strategy. The city started to implement Pacto Niterói Contra a Violencia (Pact Niterói Against Violence) in 2018, and since then it has obtained a 64 percent reduction in the rates of homicide and over 80 percent reduction in the rates of other types of violent crime.[42] The strategy relies on a combination of technology-enhanced precise policing with professional training and the delivery of social services to the population, with the ultimate goal of not only preventing violence but building a culture of peace.

In terms of the technology in place supporting and advancing its violence-prevention strategies, Niterói has set up an integrated public safety center following the example of Chicago's SDSCs, which receives and analyzes real-time footage and data from the comprehensive CCTV, gunshot-detection sensors, and vehicle-monitoring systems that are installed across the city. The strategy also puts great emphasis on the use of data and evidence, being initially designed based on a detailed household-victimization survey. The city has since set up a comprehensive violence observatory that collects and analyzes police data and broader socioeconomic data to inform its goals, action, and policies.[43]

However, to complement and improve the results obtained from the investment in technology, Niterói has equally invested in the professional training and development of its security forces, with a focus on prevention over reaction. It created a training center that offers continued education to members of its municipal guard that offers continued education to its members, including in conflict mediation, so they can make residents feel safer through positive engagement with the community. It is significant that activities related to the training and development of the guard are placed under the "Coexistence and Citizen Engagement" rubric of Niterói's strategy, and not under the policing axis. An example of this commitment is that the city let a public consultation decide if the guard should be armed and has since followed the public decision of keeping it unarmed.[44]

Furthermore, the pact has a strong emphasis in the provision of social services to mitigate social and economic risk factors for violence, using data and technology, as explained above, to help identify where there is most need for these services. They offer professional development opportunities to youth, reentry programs for the formerly incarcerated population, parenting courses to teach healthy parenting techniques, financial support to children enrolled in the public education system, and more. Niterói's success demonstrates that an effective violence-prevention strategy needs to consider the human element to be as integral to its goals as the implementation and use of technology, and that violence-prevention efforts will only succeed when the technology is used to support legitimate, integrated, and holistic policies, not to replace it.

Seoul, South Korea, meanwhile, is an example of a city that is pushing the limits of technology innovation for crime prevention. It has built a 3D replica of the city in cyberspace that integrates spatial information on housing, traffic, environment, and other related factors. It uses this replica, the S-MAP, to simulate scenarios and analyze in detail how the city would react to them and apply these insights to inform its responses and protocols.[45] Its newest project is a crime-forecasting model in which it divides the city into 100-meter grids and uses AI to identify areas most likely to experience crime in order to eliminate any blind spots in its crime-prevention system. The AI model has been trained on past crime data to assess how factors such as foot traffic, streetlights, and the purposes of buildings can make an area more or less susceptible to crime, and it uses this to calculate the level of crime vulnerability in each spot on the grid.[46]

No information was available as of the writing of this report to determine how this project is being implemented or how effective it is in reducing crime in the city. The city says it plans to use the information obtained through the predictive model to decide if it needs to allocate more patrols to specific neighborhoods or install security equipment such as lights and emergency alarms.[47] This points to a willingness from the city to use this predictive model not as a tool to profile

and repress but to be proactive in preventing violence and crime, which is a positive step in using technology to support public safety. However, if there is anything Seoul can learn from some of the other cities mentioned in this chapter, it is that technology is most effective when combined with comprehensive violence- and crime-prevention strategies that seek to address the root causes of the issue and are equipped with human safeguards. A system like the crime-forecasting model can give information not only on how likely an area is to experience crime but on exactly what factors are increasing that area's vulnerability. While increasing security forces and equipment is one way to decrease the likelihood of crime, what will have the most long-lasting impact is if the city uses this information to address the deeper structural issues that are exacerbating vulnerabilities in that specific area.

Conclusion and Recommendations

Throughout the last couple of decades, cities have been experimenting with how to integrate new technologies into their policymaking arsenal. This has led to much positive innovation, but it has equally led to questions about the ethics and practical applications of some of these tools. The current decade brought a new dimension to this puzzle with the rise of AI. While many cities jump to understand how they can best leverage these systems and tools to improve their policymaking and governance, it is important that they do not lose sight of their ultimate goal, which should always be to build safe, just, and inclusive societies for their residents with policies that are, at their core, human centered and rights based.

In the field of violence prevention, the use of technology by cities has been as widespread as it has been controversial. The trend of cities relying on surveillance technology to support their law enforcement efforts will only become more commonplace as AI models increase the effectiveness of these systems. Those same AI algorithms, however, have the potential to reinforce biases and discrimination and stand in the way of due process if they are not regulated and implemented with meaningful community participation and proper human oversight. In a geopolitical context where authoritarian governments, both at city and national levels, are only becoming more prevalent, and a weakened multilateral system struggles to hold them accountable and limit their overreach, the untapped potential of these technologies becomes a threat to democracy and human rights.

On the other hand, AI's ability to process large amounts of data and translate complex information into simple terms can be extremely useful in giving policymakers a more nuanced and comprehensive understanding of violence and crime in their cities, including integrating community insights into the policymaking process. In an environment where there are clear accountability mechanisms for public officials--where these technologies are implemented alongside broader holistic prevention strategies and with equivalent investment in human capacity--these new tools can empower local governments and civil society actors to effectively address the root causes of violence and build long-lasting change.

It is clear, then, that cities have the opportunity to build the foundation of a future in which technology is used to enhance public good and in which regulations and safeguards are put in place to ensure that policies remain human centered even when they are technology enhanced. For the cities that are committed to leveraging technology in a responsible way to build safer, more-inclusive, and more-just communities, here are a few recommendations:

- Leverage AI and technology to analyze your city at the hyperlocal level and understand the microdynamics that have reverberating impacts in the city as a whole.
- Be data informed instead of data driven. Use data to prepare, perform, and reflect, but consider the broader social, political, and economic context in which the data was produced, and be guided by social values and ethical boundaries.
- Meaningfully include communities—particularly the historically marginalized—in debates about technology governance and prioritize building trustworthiness. AI should be used to increase community participation, including

by incorporating community insights and creating open channels of communication between government, civil society, and the general public.

- Ensure that there are clear and transparent protocols, accountability systems, and proper human oversight. Government staff must be trained and empowered to exercise their human judgment at all times, recognizing that human intervention is required beyond AI processing.
- Use technology to support legitimate, integrated, and holistic violence-prevention strategies, not to replace them. Keep in mind that the human element is as integral to the success of policies as are these new tools.

With these points in mind, policymakers can be bold in their ideas for how to best integrate and leverage technology to improve their violence-prevention efforts. From cities that are just starting to set up violence observatories to those that already have a robust technological infrastructure, there is momentum everywhere to live up to the ambitions and promises of the smart cities, and to start building now the safe, just, and inclusive cities of the future.

Endnotes

1 Smart cities are those that use data and technology to improve their governance, service delivery, efficiency, and sustainability.

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About Peace in Our Cities

Peace in Our Cities (PiOC) is a unique global network of over 30 cities and more than 50 community-based and international partners.

PiOC seeks to reduce and prevent urban violence worldwide—preserving lives and helping cities thrive. It does so by creating concrete, participatory, and evidence-based platform exchanges to reduce and prevent severe violence in member cities, while also building a global movement of urban-violence-reduction advocates.

The PiOC approach is based on three lines of action:

- **Amplify** policymaker awareness of the genuine scope and scale of urban violence and opportunities available to help cities address it.
- **Advance** evidence-informed, balanced policy solutions and peacebuilding approaches to reduce the most severe forms of violence in urban contexts.
- **Accompany** city leaders, community partners, and civil society through peer exchanges and information access to realize ambitious targets for violence reduction.

Peace in Our Cities is co-facilitated by Pathfinders for Peaceful, Just, and Inclusive Societies at New York University's Center on International Cooperation; the Stanley Center for Peace and Security; Co-founder and Principal, Rachel Locke; and Expert Advisor and Membership Liaison, Flavia Carbonari. To learn more, donate, or join, please contact info@peaceinourcities.org or visit www.peaceinourcities.org.