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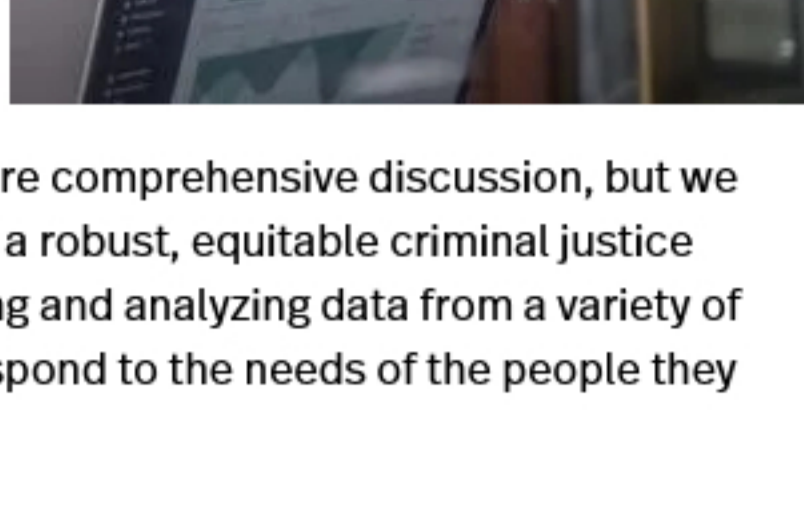
Data Analytics in Criminal Justice: Leveraging Big Data to Improve Community Safety and Resilience

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Working to alleviate the burden of crime within communities requires criminal justice experts to ask difficult questions. Who is most impacted by disparities in policing? When is it appropriate to send an officer, and when is a social worker or mediator more suitable? How can the people who observe communities work with the individuals who live in them to ensure these spaces are safe by every definition of the term?



Answers to these questions are complex and require comprehensive discussion, but we know one thing: solving disparities and developing a robust, equitable criminal justice system will require the use of Big Data. By collecting and analyzing data from a variety of sources, cities and law enforcement can better respond to the needs of the people they serve.

Daniel O'Brien, a professor at the Northeastern University School of Criminology and Criminal Justice and School of Public Policy and Urban Affairs, sat down with us to discuss his first-hand experience with criminal justice data analytics.

Urban Informatics: The Foundation of Criminal Justice Data Analytics

To understand how Big Data can be leveraged to support communities, one first needs an introduction to urban informatics. Urban informatics is the practice of analyzing modern digital data – which is generated when we use computers to interact with governments, companies, and each other – and harnessing that data to make actionable change.

"I like to say that the spirit of the field is about trying to understand and better serve cities and communities. There's so much you can learn about and so many ways to support communities through data."

- DANIEL O'BRIEN, PROFESSOR OF PUBLIC POLICY AND URBAN AFFAIRS AND CRIMINOLOGY AND CRIMINAL JUSTICE; DIRECTOR, BOSTON AREA RESEARCH INITIATIVE; DIRECTOR, PHD IN PUBLIC POLICY PROGRAM

O'Brien, a leader in the burgeoning urban informatics field, directs the Boston Area Research Initiative (BARI) in partnership with the City of Boston, which amasses data ranging from social media posts to 911 and 311 calls to building permits in an effort to better understand Boston's diverse neighborhoods and their needs. In order to address the real needs of communities, stakeholders often have to challenge conventional wisdom about markers of crime. Consider, for example, the broken windows theory, which posits that disorder within a neighborhood increases crime both directly and indirectly. Using urban informatics, which is informed by theories such as the broken windows theory, O'Brien and BARI are able to more accurately assess a situation.

By correctly identifying the root cause of disorder rather than assuming all disorder indicates crime, the City of Boston can make better use of its law enforcement resources and maintain positive relationships with its citizens.

What Are the Concerns About Applying Data Analytics to Criminal Justice?

Integrating data analytics into the criminal justice system introduces justifiable concerns about how technology may exacerbate systemic issues that lead to the over-criminalization of BIPOC communities. According to O'Brien, the key to avoiding bias is to be specific about how Big Data is used and what actions are taken as a result. Rather than targeting entire communities, law enforcement should direct their attention to individual locations – buildings, residences, etc. – where crime frequently occurs.

"Most people in high crime neighborhoods have nothing to do with crime. But if you're getting down to the focused level of looking at a property that's producing, say, 45 crimes a year, that is the place that needs attention," O'Brien explains, "And by placing your attention on that place, you're allocating resources more efficiently."

Through BARI, O'Brien works on the Problem Properties Task Force, a collaborative initiative created to address properties associated with persistent crime or frequent violations of building or sanitation codes. The task force includes more city departments than just law enforcement, allowing for a comprehensive collection and discussion of data to ensure city resources are allocated effectively. And, by working with a variety of departments, the Problem Properties Task Force is able to avoid the assumptions that could arise with Boston PD alone.

"BPD is represented but also, Inspectional Services is there. The fire department is there. Public health is there. The Breathe Easy program is there because of issues with asthma and poor maintenance. They're all there. They meet once a month or so, and they go through rosters of properties that have been nominated for intervention."

How Can Data Analytics Be Used Responsibly in Criminal Justice?

There is sometimes a disconnect between the people handling data and the communities represented by data. BARI, O'Brien says, makes a point to publicize information wherever possible and present it to the communities they serve.

"One of the things that we have been doing for years is hosting community-based trainings on how to use our Boston data portal," he says. "Any data that we work with that we're allowed to make public, we make public in some way."

He also emphasizes the importance of a criminal justice education that prioritizes the responsible use of data.

"The long-term goal is to continue building a philosophy of practice on how to train young people to be technology translators for their communities."

- DANIEL O'BRIEN, PROFESSOR OF PUBLIC POLICY AND URBAN AFFAIRS AND CRIMINOLOGY AND CRIMINAL JUSTICE; DIRECTOR, BOSTON AREA RESEARCH INITIATIVE

Speaking on his own courses, O'Brien notes his unique approach to concepts like problem properties. Instead of simply observing crime in communities, he's structured his teachings so students are encouraged to ask meaningful questions about what they're seeing:

- Are the trends they observe community dynamics or place dynamics?
- How do community dynamics manifest themselves in individual places?
- Why does crime happen at some places and not others?
- Why does crime occur in different ways at different places?

"That's a rather unique offering," says O'Brien. "I bet there's only a handful of criminology schools around the country that offer that sort of learning experience at the cutting edge of research."

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Our world-class faculty teach advanced skills in qualitative and quantitative research and analysis while providing foundational knowledge in criminological and criminal justice theories and individualized mentorship. The MSCJ curriculum, which can be completed in one year, offers students and professionals the knowledge and skills needed for leadership roles in policymaking, research, analyst work, research directorships, and law enforcement. This program also features Northeastern's world-renowned experiential learning opportunities, which place students in agencies and organizations where they can start making a difference. Plus, it includes a range of customization options, including a cybersecurity concentration and the ability to complete a graduate certificate in a related field.

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