Chicago police data study yields index for identifying networks of criminal cops

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New research led by Northwestern University can help officials identify hidden networks of officers engaging in misconduct and criminal behavior within police organizations. The study shows that police

misconduct is a group phenomenon that contributes to a disproportionate number of arrests in minority communities.

The study, "Identifying Misconduct-Committing Officer Crews in the Chicago Police Department," will be published May 4 by *PLOS ONE*. The research was conducted by the Northwestern Neighborhood and Network Initiative (N3), the Institute for Policy Research, the Department of Sociology at Northwestern and the Invisible Institute, a Chicago nonprofit for investigative journalism.

In this first-of-its-kind study, the research team used insights from three known cases of police corruption—including the ongoing case of ex-Chicago Police Sergeant Ronald Watts whose team ran an extortion racket at a Chicago housing project for more than a decade—to create a statistical model to identify possible crews of officers engaging in misconduct and, at times, criminal behavior. The model was then used to analyze publicly available complaint and arrest data on Chicago police officers from 1971 to 2018.

Using machine learning and network analysis, the researchers reviewed the records of 30,000 police officers to detect groups of officers who tend to share characteristics with known crews and who, the results show, have an outsized share of misconduct complaints.

The study detected approximately 160 potential "crews" of officers, networked by formal or informal work assignments and co-allegations. "Crew" officers comprise less than 4% of all Chicago police officers, yet they account for approximately 25% of all use-of-force complaints, city payouts for civil and criminal litigations and police-involved shootings.

Detected "crews" also contribute disproportionately to racial disparities in arrests and civilian complaints, generating nearly 18% of all complaints filed by Black Chicagoans and 14% of complaints filed by

Hispanic Chicagoans.

The project's principal investigator is N3 faculty director Andrew V. Papachristos, a professor of sociology in Weinberg College of the Arts and Sciences and a faculty fellow with the Institute for Policy Research at Northwestern.

In contrast to prior studies focused on individual traits and behaviors to identify "a few bad apples" more likely to be involved in misconduct, the study provides evidence that extreme cases of criminal police behavior are a group activity in which officers are influenced by formal and informal structures.

"This paper shows we can identify possible crews of bad cops using historical examples, like the Ronald Watts case, as a point of calibration," Papachristos said. "The Watts case is shaping up to be one of the largest police corruption scandals in U.S. history, and our paper shows what we're learning here can possibly help us find other groups of criminal oriented cops.'"

"We know that more than 200 convictions have been overturned because of the Watts case alone," Papachristos said. "If our results hold, we are talking about possibly thousands of Chicagoans who have been directly subjected to such cop crews—and even more that have been indirectly impacted."

Police violence places a heavy toll on civilians, with those in Black and Latino communities the hardest hit. For every police-involved shooting reported in the media, there are thousands of instances of non-lethal use of force, verbal abuse, demeaning interactions and problematic police behavior.

"Prior research, including some of our own, show that police misconduct

and abuse can impact people physically, mentally and emotionally for decades," Papachristos said. "And cases of cop crews that actively conceal their behavior and are protected by their fellow officers continue to undermine the relationship between the community and police, which is crucial to trust and public safety."

Jamie Kalven is founding executive director of the Invisible Institute, which houses the data on Chicago police used in the study. After the Illinois appellate court ruled in Kalven v. Chicago in 2014 that investigations of complaints filed against police officers are public information, the Invisible Institute designed the Citizen Police Data Project to make police profiles readily accessible.

"The study has yielded a tool of immediate utility to police departments and oversight agencies," Kalven said. "It is a critical component of an early warning system that enables supervisors to identify groups of officers that have characteristics resembling those of crews of officers known to be criminal. It is important to be clear: Such patterns do not in themselves constitute proof of criminality. They are, rather, prompts for supervisors to investigate."

How the Crew Index Works

Study co-author Rajiv Sinclair, who led the design team at the Invisible Institute that developed the Citizens Police Data Project and is co-founder of Public Data Works, explains how the case studies and data were used in the study.

Starting with decades of on-the-ground reporting and investigating into the individual harms perpetrated by specific groups of Chicago police officers, the research team set the parameters for a network cluster analysis of the publicly available police data.

"We know that not all discernible clusters of police officers who have been repeatedly co-accused of misconduct can be automatically identified as bad actors or criminal networks within the police department. These types of data can be noisy," Sinclair said.

"But by learning about the specific patterns and particular network characteristics that are exemplified by the known crews, we were able to narrow down the discernible clusters to just those crews that are most similar to these three well-coordinated groups of known bad actors."

After narrowing down the discernible clusters to those crews most similar to the three exemplars, the research team then reviewed each crew by analyzing investigative documents, gathering any available reporting and interviewing people with direct experience with crew members to more fully assess the validity and significance of each identified crew.

Next Steps and Study Limitations

Following the investigative feedback and validation process, the "hot lead" crew clusters will be added to the model as additional exemplars to refine the selection of network characteristics to identify future crew clusters. View a diagram of the research plan on the Public Data Works website.

While the study identifies the presence of crews, it does not answer questions about how crews emerge over time, nor does it speak to the actual culpability of the officers themselves. The degree of police misconduct is likely highly underestimated because of the efforts taken to conceal their behavior. Finally, the insights from yet-to-be-detected networks could differ from the findings generalized by the three most egregious known crews in the study.

The need for future research highlighted by this study includes investigating the types of misconduct engaged in, variance of behavior based on policing assignments, geography, and context, and understanding how such crews can exist even while others in a police organization are aware of their existence.

"Identifying Misconduct-Committing Officer Crews in the Chicago Police Department" will be published May 4 by *PLOS ONE*.

Study co-authors include Papachristos, Sinclair and Northwestern alum Akshay Jain, a mathematical methods in the social sciences major and former data science fellow at N3.

More information: "Identifying Misconduct-Committing Officer Crews in the Chicago Police Department", *PLoS ONE* (2022). journals.plos.org/plosone/arti … journal.pone.0267217

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