Outline

Note: Government websites were unavailable for public view due to executive orders that required the Department of Justice’s Office of justice programs to review websites and material to ensure that they were in accordance with the current administration’s guidelines. Sources with an asterisk were obtained using the wayback machine.

Introduction

* Overview of Predictive Policing
  + Rise of use of predictive analytics and algorithms in
* State of Crime in chicago 2010-2020
* Chicago - Strategic Subject List
  + Intentions/Goals
  + Implementations, use
  + Dissolution, Criticisms
  + Current State

Predictive policing is defined by the National Institute of Justice as “strategies and tactics that improve the situational awareness of law enforcement concerning individuals or locations before criminal activity occurs” (1).

This thesis consolidates the many studies and press releases surrounding the Strategic Subject List throughout its lifecycle and implementation. It begins with a background into the development of the algorithm itself and the identifying factors that would lead to a higher risk score. The second section outlines the implementation of the SSL out in the field, utilizing the Attorney General’s Report and a report by the RAND Corporation that was commissioned by the CPD. The next section analyzes potential effects on crime or policing that SSL had on Chicago, attempting to focus on the state of crime near its decommissioning.

Background: Strategic Subject List

In 2009, the National Institute of Justice offered millions of dollars in grants available for police departments with “burgeoning predictive programs”. Chicago received the largest grant, which was a promised $3.8 million in funding to develop “Party to Violence” (PTV) models that outlined the likelihood an individual would be a victim or offender in a shooting. CPD’s Information Services department teamed up with engineers at the Illinois Institute of Technology to create multiple versions of two types risk models. the most infamous of which was known as the “Heat List”. The Heat List, formally known as the Strategic Subjects List (SSL), used an algorithm to assign all prior individuals who had been arrested a risk score of how likely they were to be involved in a shooting (as the victim or the perpetrator) (2-AG report). The pilot program of the SSL, launched in 2013, aimed to “to more efficiently and effectively target limited resources towards subjects in a community at risk for participation in gun violence, either as victims or perpetrators” (3. RAND).

The algorithm itself went through 5 iterations throughout its lifecycle, and primarily focused on an individual’s social connection to previous homicide victims. This was determined through building social networks using co-arrests, which is defined as when two or more individuals are arrested for committing a crime together. (4). For example, in an individual’s social network, a first-degree link would correspond to a co-arrest with the individual and a subject, where the subject was identified as a later homicide victim. A second-degree link in the network would include an intermediary individual who was separately co-arrested with the individual and homicide victim (3. RAND). Later iterations of the SSL included these following indicators as well: number of times as the victim of a shooting incident, age at latest arrest, incidents as victim of aggravated battery or assault, trend in involvement in crime incidents, arrests for unauthorized use of a weapon, number of prior arrests for violent offences, narcotics arrests, and gang affiliation. These attributes, along with the number of links in an individual's social network were weighted and plugged into a quadratic model that outputted a probability that the individual would become a “Party to Violence” (AG, RAND). A maximum risk multiplier of “500+” was assigned, and would indicate extremely high risk of being involved in a shooting incident, while a score of 0 indicates extremely low risk. Allegedly, the most heavily weighted factor was the number of first-degree and second-degree links an individual had.

At the time of decommissioning, there were 399,412 individuals who had received an SSL risk score. Every individual who had been arrested in the past four years received a risk score, regardless of whether the alleged crime had been violent or not. In addition, an SSL score was assigned using unique identifiers for all arrestees in the system, such as their Individual Record (IR) number. However, victims of crimes do not have IR numbers, meaning there were cases where individuals that were arrested for non-violent misdemeanors were assigned risk scores while a victim of a shooting who was not arrested did not have an assigned score.

Controversy.

The Heat List was subject to much controversy throughout it’s initial release. The most common criticism has been echoed against many similar predictive algorithms, with studies showing that African American individuals are misclassified at a much higher rate than their white counterparts. Due to the weighting of indicators in the heat list, there were also situations where certain black individuals who had been arrested for non-violent, less serious crimes were given much higher risk scores in comparison to their white counterparts who had been arrested for more serious, violent crimes.

Attorney General Report - RAND Report on Usage

Predictive Policing not only refers to the analyses and algorithms used to identify potential hotspots or individuals linked to crimes, but it works in tandem with how law enforcement agencies choose to utilize their methods to work more effectively and proactively. (RAND – “associated prevention strategy to mitigate and or reduce risks of increased crime). In the case of the Heat List, both the attorney general’s report and the commissioned RAND Corporation report focus on how the predictions were used in practice and the potential impacts of it.

After an initial list of subjects and their risk scores were obtained, the CPD Deployment Operations Center assigned each police district .

According to the City of Chicago’s Inspector General Report, the CPD used its PTV risk models in three main ways. The first was a custom notification program, which was used to identify at-risk individuals and connect them to social support services. Second was the Target Repeat-Offender Apprehension and Prosecution (T.R.A.P.) program. This program worked with the State Attorney’s office to “focus on enhanced prosecution to detain convict, and incarcerate these offenders”, referring to repeat offenders with histories of violent and gang related crime. Third was the Gang Violence Reduction Strategy (GVRS), which was an expansive technical program that gathered intelligence on and aimed to reduce gang violence. The report also notes that “in the beginning of March 2015, the CPD began referring to SSL risk scores in the narrative sections of arrest reports (i.e. either including an individual’s SSL score or nothing that the arrestee did not have an SSL score).

The Inspector General’s report, released in 2020, reviewed version 5 and version 5 of CPD’s PTV risk models, aiming to identify the shortcomings of the program and how to improve on predictive policing programs in the future. Their general areas of concern were that the results of the algorithms themselves were unreliable, CPD’s personnel were unequipped and not properly trained to utilize and gain access to PTV results, interventions by CPD’s programs may have attached negative consequences to arrests, and the CPD didn’t evaluate certain models. The models were also not updated regularly. Up until 2019, CPD was using the same SSL scores generated in 2016.

The report also gave recommendations on how to properly phase out usage of the program, which the department quietly did in 2019. It was recommended that all language referencing SSL and SVRM be removed from all directives and CPD databases, properly inform all personnel, ensure that other agencies don’t have access to data, and conduct evaluations of alternative methods to identifying PTV risk.

CPD also commissioned the RAND corporation to evaluate version 1, 5, and 6 of their risk models. Their report…

**Data Set Analyses**

General Crime Trends

District Level

* District 4, 6, 7, 8, 11 all have higher number of violent crimes and arrests
* District 11, 15, 7, 10, all have high violent Crime to arrest ratios, meaning that generally, the chances of an incident recorded being a violent crime is higher

Year Trends

* 2010 has the highest level of violent crimes and Arrests recorded (zscore: 1.87, 1.82)
* 2011 2nd highest (1.23, 1.30)
* 2012 3rd highest

Strategic Subject List

* Inspector General names 8 indicators
* Allegedly used 11, which would likely include the 8 names indicators and the co arrests networks
* On the actual dataset, there are these following indicators listed as predictors:
  + Predictor: Age at latest arrest
  + Predictor: Victim Shooting Incidents
  + Predictor: Victim of battery or assault
  + Predictor: arrests violent arrests (number)
  + Predictor: gang affiliation
  + Predictor: narcotic arrests
  + Predictor: trend in criminal activity
  + Predictor: UUW arrests (unauthorized risk of violence)

Sources:

1. <https://nij.ojp.gov/funding/opportunities/nij-2009-2239>
2. <https://igchicago.org/wp-content/uploads/2020/01/OIG-Advisory-Concerning-CPDs-Predictive-Risk-Models-.pdf>
3. <https://link.springer.com/article/10.1007/s11292-016-9272-0>
4. https://nnscommunities.org/wp-content/uploads/2014/04/NAVCAP\_Guide\_final\_web.pdf