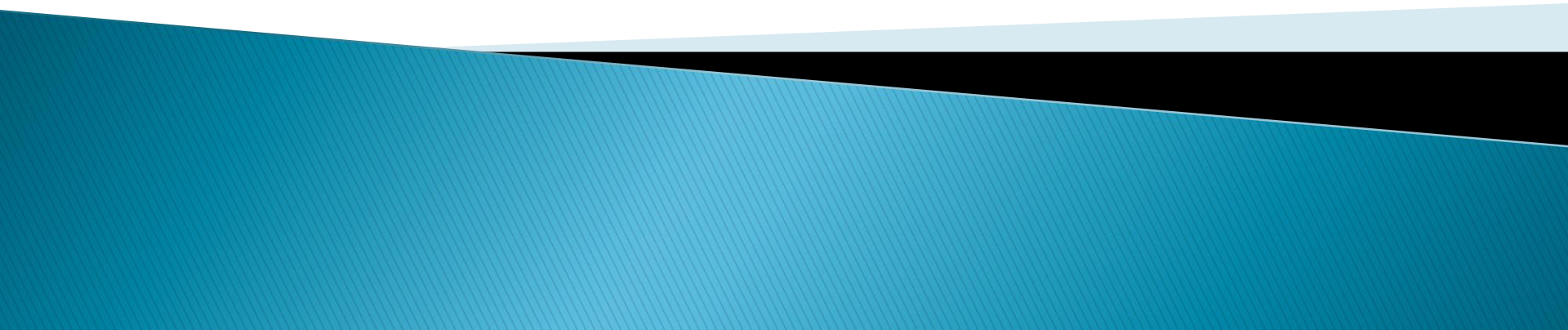


Current Debates in Psychology

“Minority Report”

Science fiction fantasy film or insight into future law enforcement procedures?

Dr. Kate Williams



The Minority Report - Background

- ▶ Originally a science fiction story written by Philip Dick (1956)
- ▶ Adapted into a film by Spielberg and starring Tom Cruise (2002)
- ▶ Brief synopsis:
 - In a future society, three mutants/gifted humans foresee all crimes before they occur. These “precogs” are plugged into a machine that allows a Precrime Division to arrest suspects prior to any infliction of public harm. When the head of Precrime unit, John A. Anderton, is accused of murdering a man whom he has never met, he is convinced a great conspiracy is afoot. On the run Anderton searches for the minority report to clear his name, as only two out of the three precogs predicted his guilt. Through a series of betrayals and changing alliances, Anderton discovers that the three predictions are rather a progression of alternate realities.

<https://www.youtube.com/watch?v=IG7DGMgfOb8>

The Minority Report - Background

- ▶ The original story was thought to reflect Philip Dick's personal Cold War anxieties, particularly the relationship between authoritarianism and individual autonomy.
- ▶ Like many stories dealing with knowledge of future events, "The Minority Report" questions the existence of **free will**.
 - Our ability to choose different courses of action.
 - Is the future set or if free will does exist, can it alter the future?
 - It also highlights the idea of whether accusing someone of a crime then begins the chain of events that lead to the crime being committed.



Predictive policing research

- Using CCTV footage from an airport in Zurich, researchers have examined whether different groups (criminal investigators & police officers of varying experience, and two comparison groups: psychology students and fresh police recruits) could spot a bag thief before they even committed the crime.
- Findings: The police officers and detectives performed better than students and novice police officers, suggesting people can learn the signs of a thief about to commit a crime.
- CCTV is already effective in ***solving*** crimes, but this along with an officers experience may help ***predict*** crime.
- But CCTV doesn't exist everywhere, & even if it did, no one person/group could continuously monitor all images.



Koller, Wetter, and Hofer, (2016)
Applied Cognitive Psychology.

So, what's the issue?

- ▶ Predictive policing **in the real world**, achieved with the advancement in Artificial Intelligence (AI).
 - “Artificial intelligence is that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment.” Nilsson (2010).
 - Facial recognition software and location tracking through smartphones is already a standard part of police investigation.



According to the 100 year study on AI by Stanford University, “*Cities have already begun to deploy AI technologies for public safety and security. By 2030, the typical North American city will rely heavily upon them. These include cameras for surveillance that can detect anomalies pointing to a possible crime, drones, and predictive policing applications.*”



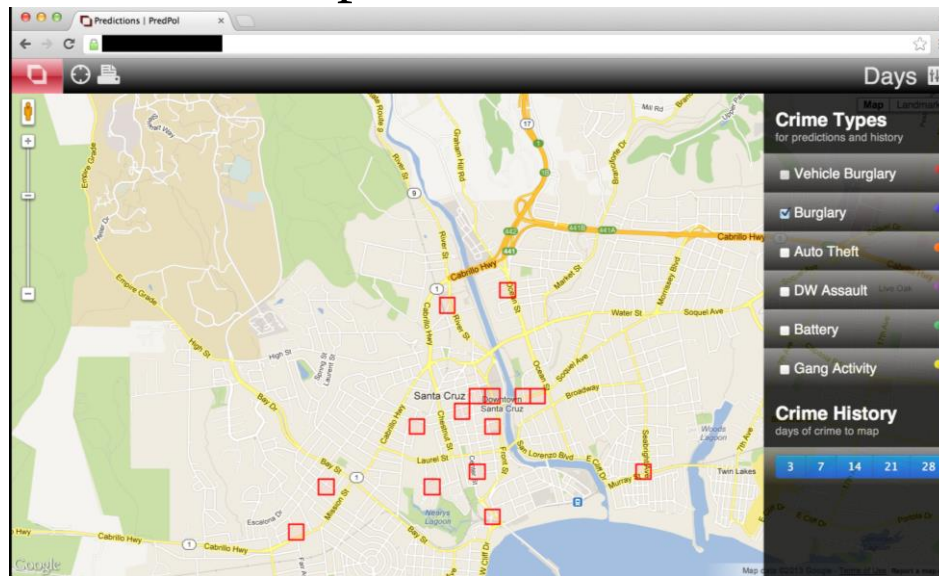
The impact of big data on policing

- ▶ Big data: The accumulation and analysis of extremely large datasets.
 - Already used for Health and Administrative Research in the UK (e.g., SAIL Databank, Swansea, ADRC-W, Swansea & Cardiff).
 - For policing purposes can include: Social media, law enforcement datasets, surveillance and tracking technology.
- ▶ AI already scans and analyses Twitter and other social media platforms to identify individuals prone to radicalization.
 - Researchers from the Social Data Science lab at Cardiff University have received grants to embed their world-leading and internationally recognised research on predictive analytics using social media into police operational processes in London and LA.



Current use of AI in policing

- ▶ Police forces in US already use tools such as PredPol and Compas systems to identify crime hotspots & highlight locations of attention from law enforcement based on statistics analysis and police reports.
- ▶ Use algorithms with data-driven results coming from a survey of the defendant and information about their past conduct.
- ▶ Regarded as effective in dealing with crime but concerns raised over surveillance, privacy and how much power law enforcement should turn over to computers.



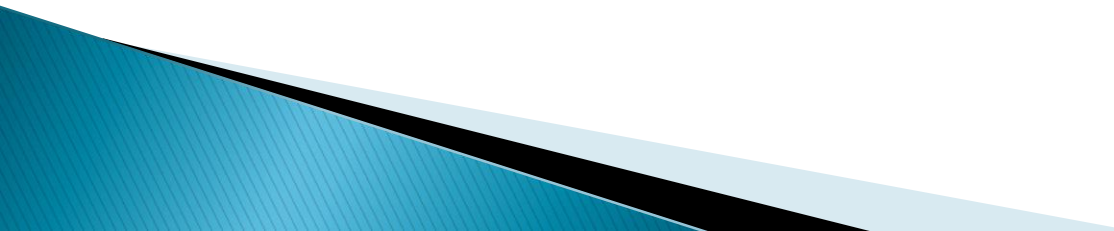
<http://www.clickorlando.com/web/wkmg/news/software-predicts-violent-crime>

“A Paradigm shift in policing”

- ▶ However, one of the Professors (Dr J. Brantingham) who helped develop the PredPol predictive policing system said that it was not Minority Report - "Minority Report is about predicting who will commit a crime before they commit it. This is about predicting where and when crime is most likely to occur, not who will commit it." (The Guardian, 2014).
 - ▶ In 2012, police in Kent, England started testing the PredPol system to reduce crime in the UK, with crime falling by 12% during the trial period.
 - ▶ However, by combining “Big Data” and AI, policing could move on from simply deploying more officers to a known area of crime and instead start targeting specific individuals.
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“A Paradigm shift in policing”

- ▶ Indeed the 100 year study on AI report even states that *“Machine learning significantly enhances the ability to predict where and when crimes are likely to happen **and who may commit them.** As dramatized in the movie Minority Report, predictive policing tools raise the specter of innocent people being unjustifiably targeted. But well-deployed AI prediction tools have the potential to actually remove or reduce human bias, rather than enforcing it, and research and resources should be directed toward ensuring this effect.”*

- ▶ However, many online blogs have warned that predictive policing presents a number of risks to more than just people's privacy.
 - ▶ The application in law enforcement presents huge capacity for abuse.
 - ▶ Restricting freedom of movement and potentially escalating a non-criminal situation into a deadly one.
 - Increases in interaction between police and target subjects is already thought to be a contributing factor to police violence.
 - How should officers interact with those suspected to commit a crime?
 - ▶ The assumptions about a person's presence in an area can have potentially harmful effects on both the person and the area.
 - ▶ Does the removal of human bias and judgment lead to better outcomes?
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In Wisconsin, a Backlash Against Using Data to Foretell Defendants' Futures (June 22nd 2016)

- Eric Loomis handed 6 year prison term – judge arrived at this decision in part because of Loomis's rating on the Compas assessment.
- The case highlighted a broader national discussion about how law enforcement officials use predictive data — including deciding which streets to patrol, identifying people at risk of being shot and calculating the likelihood of recidivism.
- However, the secrecy surrounding how the algorithms are calculated is an issue of concern and has formed a major criticism as part of Loomis's lawsuit.
- His lawyer, Michael Rosenberg, argued that Mr. Loomis should be able to review the algorithm and make arguments about its validity as part of his defense.
- Rosenberg wrote in his brief, “the Compas system is full of holes and violates the requirement that a sentence be individualized.”

The future of law enforcement?



Debate Questions

- ▶ Should we intervene in stopping a crime before its been committed?
 - Can arresting someone before they commit a crime be justified?
 - ▶ Does the type of knowledge/measure we use to predict future crime behaviour make a difference in the justification of its use?
 - ▶ Can we ever be sure that our gathered data is accurate in suggesting that a crime will likely be committed?
 - ▶ Does the type of crime matter?
 - ▶ Do we have free will?
 - ▶ Could the act of accusing someone of a crime then begin the chain of events that lead to the eventual predicted outcome?
 - ▶ What Psychological factors should predictive policing take into account?
 - ▶ Bonus question: If a precrime unit did exist who should be in charge or control of it?
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