Privacy Implications of Sewage Testing for Illicit Drugs

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Smart Cities

- digital urban ecosystems
- monitors everyday activities and environments
- collects or generates data



Internet of Things (IoT)

- 20,5 billion devices
 will be connected to
 the Internet by 2022*
- Market value is
 expected to raise
 from \$170.57 Billion
 in 2017 to \$561.04
 Billion by 2022*

45 Zettabyte by 2020



Privacy Concerns

- Traditional privacy protections don't work
- Privacy by Design: "don't collect personal data" ???
- Individual \rightarrow Group Behaviors:
 - Targeted
 - Discriminated
 - No self-awareness



Wastewater Testing

Schematic of the population catchment area and methodology employed to convert measured concentration of substances in wastewater to mass loads or doses consumed per day per normalised population.

- What: Illicit drugs, pharmaceuticals, biomarkers
- How:
- Where: Special applications; schools, jails, festivals, clubs



Wastewater Testing



Case Study I: Australia

- What: Illicit Drugs
- When: Capital cities are tested every 2 months;
 Regional sites are tested every 4 months
- Welfare Reform 2017



Case Study II: Turkey

- What: Illicit Drugs
- "Already existing public perceptions", "exemplary case"
- **Quote:** Provincial Police Chef of Istanbul Mustafa Çalışkan said that, "Analyzing Drugs and Other Psychoactive Materials in Waste Water "project is important for us. The project will provide the opportunity to intervene in the correct means through processing the research data properly to: (i) reach to the crime and the criminal with proper evidences which provides spatial and time wise information, (ii) determine the illicit substance consumption and production ratios to map the city and create a narcotics map, (iii) through creating a narcotics map, we would also be able to actively and fruitfully pursue our "prevention and awareness" activities.



Case Study III: MIT Underworlds Project

- What: Disease
 Outbreak, Diabetes,
 Obesity, Illicit Drugs
- How: Robot Luigi
- Where: South Korea, Massachusets, Kuveyt
- Accurate and Granular



Conclusion

- Even though its not a data on a specific individual, the data being generated by the group still poses similar harms that individual data might have.
- Even though the anonymized data sets do not fall under data protection laws the outcomes or effects of the anonymized data are very similar to the outcomes that data protection laws try to protect against. (ie. Discrimination, social stigma, physical harm)
- Data is often thought as objective, it is NOT. Policy makers can use this data to back up their own political pre-determined decisions (e.g. crack down on poor welfare recipients). More data does not necessarily create objective policies.
- We need better mechanisms to develop smart cities that will make positive changes for communities. Simply removing the collection of individuals' data does not necessarily protect individuals but it does remove their control over their data. It is imperative to give back the choice and voice to the individuals that make up this group of data.

Thank you!

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