Changing Perceptions Through Technology

Criminals leave more than physical fingerprints behind at a crime scene. They leave distinctive patterns in data that can be used to track them and even predict their movements.

When police officers record as much information about an incident as they can, they are dusting the scene with data. Contained within those numbers may lie the digital fingerprint that will be used to apprehend the criminal in the future.

And when large quantities of data are gathered, stored, and analysed, the true picture of policing can be revealed for the first time. No longer will we rely on anecdotes or biased perceptions. The data will show the successes of the police direct to the public, and help ordinary people understand the work going on in their neighbourhood to keep them safer than ever before.

Tao Cheng, PI of the CPC project

Paul was using an ATM machine to withdraw some cash. To his frustration, the machine retained his card for no apparent reason. Some time later he discovered that 600 pounds had been withdrawn without his permission from his account. It turned out to be a sophisticated scam with hi-tech thieves tampering with the machine. Thankfully the bank detected the fraudulent activity and Paul had his funds returned after he reported the crime to the police.

If anyone asked Paul's opinion about the levels of crime in that neighbourhood, his response might be very negative because of his experience. If only he had some other source of information, perhaps he might come to different conclusions. And if the Police had the capability to analyse their vast archives of information, model criminal activity, and direct resources appropriately, could they even prevent such crimes in the future?

By coincidence, Paul does indeed have more information. Professor Paul Longley is one of several researchers involved in a new project recently launched at UCL, which aims to tackle these issues head on. The Crime, Policing and Citizenship (CPC) project is a collaboration between the Police and four Departments of UCL: Civil, Environmental and Geomatic Engineering, Geography, Security and Crime Science, and Computer Science. The project aims to make use of the increasing data gathered by officers in two important ways – to increase awareness by the public, and to tackle crime itself through cutting edge data analysis.

Trevor Adams is the Metropolitan Police advisor for the CPC project. Adams served as a Police Officer for 30 years. Today he is a senior analyst who has been instrumental in the creation of MPS Crime Mapping both internally and on the Internet, the National Crime Mapping website and more recently the "End-to-end" Criminal Justice mapping. "We think that there are insights that can be reached looking at our information that will help us understand why reductions in crime do not lead to increases in public satisfaction," he says. "If we can in some way predict when and where crime will occur and how to keep the public informed about what police are doing in their area, this will reap benefits in ensuring we make best use of our reducing resources in the current economic climate."

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Kate Bowers, a Professor in UCL's Department of Security and Crime Science and co-investigator on the CPC project, understands these issues very well. "When people are asked to comment about the activities of the police they tend to fall back on their personal opinions or experiences and scale them up to form a general viewpoint," she says. "This is why even people who live in relatively safe areas can sometimes feel that the police could do more. The police know that the public face of their organisation is vital in

people's assessment of their effectiveness and their feelings of safety. They are getting better all the time at sharing information with the public and I think this is the key to ensuring that perception moves into line with the reality of crime risk and levels of resourcing that the police provide."

The CPC project aims to move from the common practice of descriptively mapping crime data, to producing intelligence concerning the potential spread and patterning of crime problems and how resources can be best deployed to address them. The project will exploit a unique combination of cutting edge approaches from engineering, quantitative geography, computer science and crime science. Brand new spatio-temporal data mining techniques will find those elusive patterns hidden in the Police data. Tao Cheng, a Professor in Geoinformatics, is the Principal Investigator of the CPC project. "It will change the way the Police work and understand how the public think about Police work," she says. "It will change public perception if we can present the crime and Police data better." Kate Bowers is enthusiastic about the work. "To maximise the benefit of this," she says, "we also need to do this with a firm understanding of how this would apply to crime prevention practice, which is why I am delighted that we have got the Metropolitan Police as a project partner."

Adams has his own clear vision of what is required. "We are hoping to be able to better target resources and in some way predict crime patterns based on past behaviours and activities that will engender public support that we can shout about," he says. "We also want a system that can measure the impact of policing in an area. The system would be used in the Command and Control Rooms and in the 'Grip & Pace' Centres that are responsible for directing policing on a day-to-day basis."

Criminals cannot help but leave their digital fingerprints behind. Through projects such as CPC, in the future these data trails will help prevent crime, and the public will have access to clear and accurate information about safety in their local areas.

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Resources

CPC Project: http://www.ucl.ac.uk/cpc/
MPS Crime Mapping: http://maps.met.police.uk/
National Crime Mapping website: http://www.police.uk