

Investigation and detection: Back to the future

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Abstract

This article reflects upon the key insights and evidence from policing research with regards to the organisation and conduct of police crime investigations and detective work. In particular, it attends to how a number of innovative technologies have had a shaping effect on this aspect of the police role. A central thread of the argument developed is how shifts in the context for policing, associated with the information environment has been inducing socio-technical changes to how crimes are investigated and resolved. Projecting forward from such developments, the article concludes by speculating on the ways the increasing availability of 'opensource intelligence' might reconfigure the social organisation of police crime investigations.

Keywords

Police, crime investigations, detective work, open-source intelligence

One of the abiding functions of academic scholarship on the police should be to detect and describe some of the deeper patterns of thinking and doing that shape the organisation and conduct of policing. Police research should not just be about instrumentally evaluating the most recent innovation being implemented to solve a currently pressing problem in order to divine evidence of 'what works' or does not, although that is important. A significant proportion of the collective policing studies effort needs to be directed to digging beneath the surfaces of current policy and practice, to identify what is shaping and structuring these and their trajectories of development.

It is precisely this quality that underpinned and is shared by all the 'classic' and 'seminal' studies upon which our contemporary approaches to studying and understanding policing have been built. Albeit focused on different facets of policing and how it is performed across different times and places, the findings and insights that were derived from careful and meticulous data collection and interpretation of the available evidential sources, did cohere into a broadly generalisable picture of what policing is, how it gets done and why it sometimes fails.

However, one striking observation about these foundational studies was that, with a few notable exceptions,

they largely neglected the work of detectives and crime investigation. This is in spite of the fact that the public understanding of crime and policing has always been strongly guided by both fictional and factual depictions of crime detection in the media. The investigation of heinous crimes and the attribution of criminal responsibility for these, have undoubtedly had an 'outsized' influence upon the public imagination.

Framing the issues in this way is helpful for reviewing changes in the state-of-the-art over the past 25 years as it pertains to crime investigation, for it reminds us that although some things have changed and evolved, much has also remained more or less the same. This is an important point inasmuch as the base motivations for how and why people engage in behaviours that are defined as criminal are pretty universal and constant. It is also the case that in the aftermath of such acts, police investigators are always charged with answering two fundamental questions: (a) 'Has a crime, as defined in law, probably taken place?';

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and if so, (b) 'who did what to whom and why?'. Consequently, many of the methods via which the perpetrators of such criminal acts are identified, and the ways that cases against them are constructed by police, would be very familiar to previous generations.

That said, however, there are a number of areas where substantive changes to how investigative work is performed, can be observed. The drivers for some of these changes are largely internal to policing, but others are inflected by wider societal forces and transformations. Almost certainly, the most important example of the latter are the impacts of a range of technologies, especially those involved in identifying, exfiltrating and analysing biological trace evidence from crime scenes, and also those relating to digital intelligence and evidence. For both sets of technologies, in attending to how they have altered the conduct of crime investigation, it is worth retaining the key general insight from the sociology of science and technology studies that, although often rhetorically presented as 'solutions', technological innovations almost always induce complex effects upon organisational routines and processes.

Twenty-five years ago, the possibilities and implications of DNA profiling for police investigative practices were already well established, but the extent to which the National DNA Database (NDNAD) could extend the usefulness of biological trace evidence extracted from crime scenes was less certain. As an issue, this is clearly settled now, with the NDNAD routinely contributing to suspect identification and incrimination. And perhaps equally importantly, prosecutors and juries increasingly expecting there to be DNA evidence being used to connect the suspect to the crime scene and/or victim in some way. Police officers know this, and often 'lean' quite hard on such materials when configuring their case narratives. However, in keeping with the previously mentioned issue about complex effects, progress has not all been in one direction. Notably, as innovations in DNA extraction and analysis techniques have become exquisitely sensitive, so they have generated some unintended consequences for police users.

One such effect is that because so much more information in the form of physical samples can be exfiltrated from a crime scene, in order to manage pressured budgets for paying for these materials to be scientifically processed and interpreted, investigators are increasingly restricting the geographic parameters of their crime scene searches. That is, they are effectively searching smaller areas, but more intensively, than would have been typical for earlier generations of detectives. Relatedly, however, on many occasions, just because biological contact trace material is located at a crime scene, does not necessarily mean it was transferred as part of the crime. Consistent with which, police investigators continue to have to launch multiple investigative

actions to trace, incriminate or eliminate individuals connected to the scene in some way by trace materials.

It can be argued, however, that not all the potential gains associated with these innovative forensic technologies have been practically realised. For other reforms have induced frictions and frustrations that have mitigated how such techniques are integrated into wider investigative systems and processes. One example of this from the United Kingdom was the political decision to disband the Forensic Science Service and shift to a more 'market'-based approach, utilising multiple private providers. The net result of which appears to have degraded the quantity and quality of scientific expertise available to advise and assist police investigators.

Expertise is also an issue impacting more directly upon policing itself. In the aftermath of the 2008 global financial downturn, the imposition of austerity and public sector budget cuts saw aggregate reductions in the number of police officers, and in particular the retirement of large numbers of the more-experienced staff. One consequence of which was the curtailing of the informal 'intergenerational transmission' of investigative knowledge and skills from those police with more experience to their junior colleagues. So although over time the overall numbers of officers has been gradually recovering, this period may have a longer-term lagged effect. Plausibly such impacts could be especially acute in the domain of major investigations, where information, intelligence and evidence derived from increasingly specialist and sensitive technologies is being brought alongside and integrated with materials derived from very different methods. This is often not a simple undertaking. Knowing what questions to ask and how to interpret any results appropriately, to understand how they might support or potentially contradict insights obtained via other investigative techniques, requires significant skills and knowledge.

Of at least equal consequence in terms of its impact upon police investigative practices, is the role of digital technologies. Again, reinforcing the narrative about innovative technologies inducing complex effects, there are several impacts that need to be catalogued. Most obviously, the internet and social media have created new forms of crime, as well as altering how some more traditional crime types are performed. These patterns and trends, for example in terms of the growth of hate incidents and digitally enabled frauds, are important in that they are creating increasing demands on the policing system. Equally, the devices used to transmit and receive digital communications data are vital sources of intelligence and evidence for the police. But once again this is not wholly straightforward, in that police are now routinely accessing so many devices, containing so much data, that it is almost outstripping their capacity to process and make sense of it in a

timely manner. Recently, they have been taking tentative steps to explore how new artificial intelligence tools, such as Large Language Models, might help alleviate these kind of pressures. However, they are lagging very much behind where the commercial state-of-the-art is and where it will soon be.

These same digital technologies are also having a transformative impact on the politics and accountability of police crime investigations, through the ubiquity of camera phones that afford new forms of transparency. For these provide an opportunity for members of the public to record both criminal and police actions. Thus when police responses fall short or are deficient in some respect, these digital sources can provide compelling evidence that this is so, 'seeding' the ground for negative publicity. This notwithstanding, it has always been the case that one of the primary determinants of police investigative success when confronted with a crime is the quantity and quality of information provided to them by members of the public. Arguably, what is happening now is that this transfer of information from public to police is being mediated by camera phones and other digital devices.

One allied technology with potential to have an increasing impact upon police investigative strategies going forward is facial recognition. To date, public and political debates and awareness about facial recognition have largely fixed upon what is dubbed 'live facial recognition', or contemporaneous monitoring to try and algorithmically match images of individuals passing by a camera, with a 'watchlist' of images of wanted suspects. However, there is a second mode of application for facial recognition technologies that has received far less attention. This involves taking images from CCTV and similar from the scenes of unsolved crimes, and searching for matching images from large police databases of known criminals. The results returned by such searches only constitute intelligence, but early evidence suggests considerable potential for generating leads for investigators confronted with otherwise intractable cases.

One justification often invoked by police for their use of such technologies is that communities, from which crime victims, perpetrators and witnesses are drawn, are becoming more complex and fluid. People are more mobile than ever before, both in terms of their routine activities and day-to-day behaviours, but also in terms of how patterns of migration are profoundly altering the socio-demographic make-up of many urban areas of Britain. We cannot ignore the shaping effects that these induce in terms of the organisation and conduct of police investigative strategies. After all, police officers are routinely interacting with citizens, cast as victims, suspects and intelligence sources, who are drawn from different cultures and communicate in different languages. Further to which, it is not uncommon for a crime

occurring in Britain to have its causes in community tensions and frictions that have their origins on the other side of the world.

Given this confluence of pressures and issues, it is potentially time for some radical thinking about 'how some investigative work gets done and by whom?'. My thinking in this regard has been occasioned by some of the developments that can be observed with the use of open-source intelligence (OSINT). Although there are multiple definitions circulating about precisely what does and does not constitute OSINT, there is a broad consensus that it is publicly available data, very often (although not exclusively) accessed via the internet and social media sources. The key point being that as an artefact of the kinds of technological trend outlined in earlier sections, there is just lots more data easily available, documenting peoples' public and private behaviours and actions.

In domains such as countering state threats involving activities such as espionage and the running of influence operations, the exploitation of open-source intelligence has become a powerful resource in the efforts to identify and expose malign actors. Perhaps the best known example of which was the work undertaken by the investigative journalists Bellingcat into the Novichok poisonings of Sergei and Yulia Skripal in 2018. Through skilled exploitation of a range of open-source material, Bellingcat's investigators were able to attribute the attack to two operatives from Russia's military intelligence agency the GRU, including revealing both their personas and real identities. Almost all major media organisations, including the BBC and *New York Times*, as well as activist civil society organisations, maintain teams trained in OSINT techniques, to inform the investigative work they undertake. OSINT is also a key instrument in war crimes investigations and in justifying the imposition of economic sanctions.

An increasing number of policing organisations have also demonstrated interest in the potential of open-source, training staff and establishing roles to focus upon the identification and analysis of publicly available material relevant to their work. That this is happening simply reflects the dynamics of the information age, wherein 'the digital dust' of our lives and interactions is so voluminous and accessible. Commercial firms expend a lot of effort and resources in using this to reconstruct understandings of who we are, what we like and do not like, and what we do. Very similar processes can be used to deliver public safety outcomes.

And yet, in thinking that they have to 'on board' open-source investigations work and train their own staff to do it, policing organisations are rather missing the more radical potential here. Instead, we could imagine a scenario in which much of the initial investigative work involved in

identifying open-sources – checking their provenance and establishing whether they indicate an offence has likely taken place, and who might be involved – is not performed by police officers or even police staff at all. An increasing number of highly motivated open-source teams based in universities, civil society and for-profit organisations already specialise in different types of investigations. By engaging with them, could police organisations significantly extend their capacity and capability to exploit open-source data for their investigations? This may involve an element of training and accreditation to ensure suppliers understand the requirements around chains of evidence and similar. Moreover, police would always have to retain powers of arrest, making decisions to charge and taking cases to prosecution. But ultimately that does not mean that they have to do all of the earlier work involved in identifying, collecting and checking potentially relevant material. Such a system, properly designed and implemented, might help ameliorate the current situation where the demand for police investigative services is routinely outstripping their ability to supply these.

In some respects the shift towards such an approach would constitute a move ‘back to the future’. After all, scholarship on the history of policing has documented how the idea that the police should have ‘end-to-end’ responsibility for the conduct of investigating crimes, was only progressively achieved over the course of the nineteenth and into the twentieth century. Prior to which, there were a variety of arrangements in place. Indeed, in some particularly complex areas, such as large-scale

frauds for instance, police organisations have continued to rely heavily on outside expertise to inform their investigative strategies. After all, the police as an institution were effectively ‘invented’ in response to some of the social, political and economic pressures unleashed by the industrial revolution and its allied processes of rapid urbanisation. Thus, if the ‘information age revolution’ that we are living through currently is anything like as consequential in terms of its impacts and effects, it seems quite reasonable to surmise that the institution of policing and some of its core functions may need to be ‘reinvented’ if it is to meet public needs and expectations into the future.

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