

FROM THE SCENE OF CRIME TO THE COURTHOUSE

MEETING OF THE PARLIAMENTARY AND SCIENTIFIC COMMITTEE ON MONDAY, 28TH FEBRUARY 2005

Crime is big business, it causes untold harm on our streets, damage to our communities and nets billions of pounds each year for those responsible. It blights vulnerable communities, ruining lives and instilling fear. As criminals become more sophisticated, so we must raise our game to fight it. We must make better use of science and technology to stay ahead to reduce the harm it does to the UK and its citizens.

Bill Hughes describes how he directs the SOCA and collaborates with international partners where he uses all the means at his disposal to attack and disrupt the often very complex and multifaceted worlds of serious and organised crime. Gloria Laycock presents scientific methods used in crime management and policing with the primary aim of preventing or reducing crime. Gary Pugh discusses his work on the scene of crime and new approaches in the interpretation and presentation of forensic evidence, designed to support the Metropolitan Police Service as a world leader in the use of forensic science.

Tackling Organised Crime

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The new Serious Organised Crime Agency (SOCA) will, from April 2006, bring together four key law enforcement agencies (National Crime Squad, National Criminal Intelligence Service, the investigative and intelligence work of Her Majesty's Customs and Excise on serious drug trafficking and the recovery of related criminal assets, and the Immigration Service's responsibilities for organised immigration crime). But SOCA is no mere amalgamation of existing agencies. It will be bigger and more effective than the sum of its parts. SOCA will target serious organised crime that impacts on the UK. It will work to a clear system for prioritising operational targets, and its approach will capitalise upon the experience of the law enforcement community nationally and internationally founded on robust and evidence-based techniques, within a framework of clear legal guidance and high professional standards.

SOCA will be intelligence-led and will use tactics from conventional evidence gathering to private sector initiatives and interaction with

professional bodies to undermine organised crime.

It will take a radical and innovative approach to act decisively and swiftly to destabilise organised criminal enterprises and will focus on disruption and dismantling and other interventions as well as arresting and prosecuting. It will send out a clear strong message to those who think they can promote serious organised crime in the UK.

What do we mean by "Harm" reduction?

This is a new departure for us in the UK – to move away from the old "bean-counting" approach of the past. The Home Office and others are seeking to measure harm caused to the UK – not simply economic harm, but real lasting damage to the fabric of our society. This is what will make SOCA unique. It will seek to make the UK the most hostile environment in which serious organised crime can operate.

We currently believe that the harm caused by serious organised crime is valued at a minimum of £20 billion, and possibly up to £40 billion. But what price can be put upon wrecked lives or wrecked businesses?

However, before SOCA can start measuring harm reduction, we need to first understand the business methodologies of crime.

From source to street

If the UK really hopes to undermine serious organised crime in the UK, we have to be radical. We must not rely upon law enforcement alone, or even the old tried and tested methods. We have to deal with the causes of serious organised crime and not keep addressing the symptoms. At the moment, every time we bust a major OCE, another steps in because the rewards are high and the risks, by comparison, are low.

We have to reverse this scenario so that the risks become much greater than the reward, and the rewards become disproportionate to the risks. The UK has to be perceived as a hostile place to do business. This means a sea-change in our approach to the threat.

Therefore when we remove an organised crime group, we must review and understand how their business was constructed and why they were successful so that we can destroy the facilitation support

structure. This will allow us to provide evidence to government and to professional institutions and regulatory bodies, so that, instead of relying upon anecdote, we can give factual detail on how these businesses work and how they are able to take advantage of the criminal justice system.

In the business world, hostile takeovers are commonplace. Predators will conduct a detailed analysis on the target company's business. The individual analysis for areas such as outlet sites, management and workforce structures, profits and losses, and productivity rates will contribute to a composite from which the predator will identify the vulnerabilities, both at individual sites and as a collective whole. It will inform and formulate its takeover strategy, which will be tailor-made with specific tactics to attack individual sites.

Such principles can be applied to the drugs market. In knowing the composite structure of the heroin or cocaine market from strategic assessments, we can apply a simultaneous strategy of enforcement and intervention using all our resources, to weaken and disrupt serious organised crime and thus destabilise the market. The alternative is to carry on attacking individual silos. If so, then whilst we might impact significantly on them, we are probably not doing much to fragment the drugs market in the UK.

The private sector has long recognised that scientific managed processes are a vehicle to deliver and SOCA's Forensic Service will play a significant part in exploiting those methods to develop that understanding around the business methodologies adopted by criminals. Whilst prosecutions are central to the disruption and dismantling of organised criminal enterprises more emphasis is being put on forensic science to support that process than ever before. However, forensic resources are finite and are operating in a changing operational environment that is subject to external market forces. As such we must maximise the use and benefits of this expensive area through the proactive use of forensics.

"Every contact leaves a trace" – it's not just about fingerprints and DNA

that can be recovered from crime scenes. The commodity itself will be analysed not only to profile and check against other seizures but to develop understanding on the manufacture process. For example, Class A drugs that find their way to the UK are all similar in appearance at the point of entry. These are pressed, packaged and branded to a very high "industrial" standard; it is forensic science that will provide the investigation teams with knowledge of process and the materials involved in production and distribution.

SOCA Forensics will therefore provide a holistic approach to the whole investigation process, facilitating total forensic ownership from conception to conclusion in court and not start from when a crime scene is identified, as has traditionally been the case. This approach will engage specialist and sensitive operational techniques uniquely tailored to support the investigation of organised crime. In addition it will support law enforcement by providing guidance and specialist operational capabilities when appropriate.

SOCA forensic scene examiners will be investigators rather than just evidence gatherers, and will be highly trained and vetted specialists able to work and manage the dynamic and complex surveillance environment. They will support lawfully intrusive aspects to operations, providing assistance with planning and evidence gathering. In particular, specialist teams able to operate covertly anywhere in the world recovering samples for analysis and using the latest technologies can send electronic exhibits back to the forensic unit in the UK with results within hours rather than days.

Partnerships

Multi-agency working is not a new concept and there are many examples of effective partnership initiatives at all levels of law enforcement.

For example, new digital technologies are entering the market place and are being constantly updated at a rapid rate. There is a need to stay ahead of the criminals and this requires project-managed research and development to ensure "first mover" advantages so that the organisation remains at the cutting edge. Slow development equals the

loss of technical and forensic environmental leadership and the criminal will only need to keep up with the market to stay ahead of law enforcement.

UK law enforcement therefore has not only to educate our non-law enforcement partners in the handling of intelligence but then to trust them to do so. The role of regulatory bodies or professional institutions will be vital in this regard. We cannot approach the private or public sector in the semblance of partnership without living up to the spirit of it. We need to share what we know with them. Equally, they need to value the trust we have placed in them. SOCA will provide the opportunity to harvest the forensic output, maximise operational effectiveness and direct research and development through joint agency collaboration. This will involve the exploitation of national and international forensic databases for the evaluation and aggregation of forensic product and will support decision-making through the tasking and co-ordinating process.

So how will we know that we are having an impact?

If we successfully understand the serious organised crime business, then we should also know when the commodity supply is altered, or the organised crime enterprises change their methods of operation.

If we understand the business from source to street, we should know when street prices or purity levels have changed, when supply is difficult; and when distribution centres have altered or disappeared. The intelligence does not stop when we put the operation in place to attack. As law enforcement officers, we need to see the benefits of continuing intelligence gathering and analysis as the operation occurs. At the moment our fixation is on the arrests, seizures of drugs and the subsequent prosecutions, and not upon the harm caused. We need to quickly attain a better overall picture of the problem. If we are not preventing the business of drugs getting to the street, then no matter how many arrests we make and however many kilogrammes of drugs we seize, we will fail in our mission.

So where does all this take us?

Law enforcement has to review its role and tasks. It is about focusing

on the entire business of serious organised crime, and ensuring we have the intelligence support that properly tells us what is happening and how it works.

We must develop multi-agency approaches and strategic alliances across the world. This is more than simply liaison and attending conferences together. This is real co-operation and joint working, and sometimes it is difficult. Egos and status can sometimes intrude on good working relationships.

Sometimes, we will be constrained by the market-place, political and legal factors. They are there to make life more interesting and challenging, and we will seek to understand them, and wherever possible, seek to change them, properly and with well reasoned arguments, supported by evidence. That evidence will be based upon high quality, timely and accurate intelligence.

We will operate jointly and effectively to disrupt, disable and

defeat serious organised crime. We want serious organised crime to fear us and our methods. We will, properly and ethically, turn their own lieutenants against them, whether to give evidence at their trials, or, even more importantly, to tell us how they operate and succeed, so that our intelligence picture is complete.

Our successes will be common successes for us all. Serious organised crime is a business. Our business is to put their business out of business.

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Policing and Crime Prevention

Gloria Laycock

Professor of Crime Science, University College London



When John Kennedy became President of the USA he made two promises to the American people. The first was to get a man on the moon and the second was to eliminate poverty. He only delivered on one of those promises and it was the one where he listened to the scientists. If we are serious about bringing crime under control and being able to say how we did it, then we, also, need to start listening to scientists.

Reflecting this idea the Jill Dando Institute of Crime Science (JDI) was established at University College London in 2001. The Institute was founded with support from the Jill Dando Fund of over £1million – money raised by the Trustees – much of it from the general public who were appalled at the murder of Jill Dando, a popular TV presenter, on her own doorstep. Our aim at the JDI is to change the way in which people think about crime and respond to it.

Science can help this task in at least four ways. First, the police and their partners need to think scientifically. They need to use data, logic, evidence and rationality; they need to test hypotheses and establish knowledge. Secondly, the techniques of the scientist need to be brought to bear on our understanding of crime and its causes. We need to get away from the emotional rhetoric so beloved of politicians and take a cold hard look at what is going on. Thirdly, as we begin to understand crime better we see that science can help in preventing crimes from happening, and finally, recognising that the probability of capture is more significant than what for many is the remote possibility of punishment, science can help in catching offenders more quickly and bringing them to justice. In this brief paper I will concentrate on the first three ways in which we feel science to be relevant to crime reduction.

To anyone with a scientific background these ideas might seem totally obvious – what else would you do? But a surprising number of people take exception to the idea that science can contribute to a set of socially defined problems like crime and disorder. It is, for example, quite revolutionary for some of our public policy colleagues to hear that experimentation might be a good idea. The Government regularly launches "pilot schemes" but well before anyone has had the chance to say whether or not they work, we hear that the prize new idea is to be launched across the country with a fanfare of trumpets. That is not the way of a true scientist.

Another attribute of crime science, which is how we characterise this approach, is that it is multi-disciplinary. An epidemiologist, for example, or an electrical engineer can have a significant contribution to make to the reduction of crime. The closest analogy is perhaps with

medical science where we are used to the idea that to keep us well, or make us better, a whole range of sciences contribute. The same is true for crime science.

What do we know about crime and its prevention?

We know that conventional policing, which relies for its effect upon general and specific deterrence and incapacitation, has limits. Offenders fairly quickly learn that they will probably not get caught – so the deterrent effect of sentencing is reduced.

We know that crime is common: 33% of males will have a conviction by the age of 46; half will be convicted only once, just over half will have a criminal career of less than a year and nearly half will be convicted of theft for handling stolen goods. So although a lot of people commit crime they do not do it for long and it is arguably not very serious. They do it because it is easy. And they are distinct from the "proper" or "professional" offenders who are not so easily deterred and of whom there are far fewer. They are the ones who really do need to be caught.

We know that the immediate situation within which we find ourselves is a powerful determinant of what we do. And it is easier to change situations than it is to change people. The crime patterns that we see are a reflection of the criminal opportunities that the situation offers.

Crime patterns are constantly changing in reflection of this. For example the Internet has opened up opportunities for new crimes but also new ways of committing old ones. It also offers stealth and anonymity to those with the necessary skills. E-crime can easily open up multiple opportunities for crime in one event. For a burglary, there is one opportunity per event, but if a hacker opens up a bank's files this offers the opportunity to steal from many different bank accounts in one operation.

We have also learned that crime-prone goods have certain

characteristics. They can be characterised as fitting the acronym CRAVED. They are concealable, removable, available, valuable, enjoyable and disposable.

Anything fitting this acronym needs extra protection. The most obvious example is cash, but TVs, videos and of course the mobile phone, are also vulnerable. That is where the electronic engineer comes in, by designing goods so that they do not work if stolen.

As with any science the starting point is the collection and analysis of data. The discovery that victims are repeatedly victimised has been described as one of the most significant findings of the 1990s. We know from the British Crime Survey that about 4% of victims suffer 44% of crime. It concentrates. Looking just at property crime, 3% of victims account for 51% of crime. Prior victimisation, for a vast range of offences, is the best predictor of future risk. Furthermore repeat crimes occur quickly after the original offence, which offers the opportunity for immediate targeting. One of the reasons that high crime areas have high crime rates is simply because there are more repeat victims in those areas.

Work carried out by Shane Johnson and Kate Bowers at the JDI, using techniques from epidemiology (their backgrounds are mathematics and computer science), has shown that domestic burglary not only clusters in space – ie homes are vulnerable to repeat burglary, but it also clusters in time – you get what might be called a "spate" of offending, which then moves. In high crime disadvantaged areas it is the original victim that is at risk but in more affluent areas it is their immediate neighbours. This increased vulnerability lasts for a number of weeks, but is greatest in the first few days. These results are opening up all sorts of crime prevention and detection possibilities which, with Home Office funding, we are now testing in a police force area.

Future plans

We are hugely optimistic that this approach is right. It rings true with practitioners who are keenly interested, for once, in academic research! There are, inevitably, ways in which the approach could be improved, and its implementation speeded up. The data, for example, which is the life blood of any science, is often poorly recorded in police data systems and we have to go through hoops for months at a time to get access to the kind of detail on offending that we need in order to carry out our research. If anyone tells you that the Data Protection Act is not a problem for researchers then please refer them to me!

We would like to persuade the Government to apply Section 17 of the Crime and Disorder Act (which says that local authorities need to take account of the crime consequences of their policies) to all statutory agencies. This would make a major difference to policy development and ultimately to crime control.

There are also, as with any developments in science, the frustrations of raising money for pet ideas. We know that our ideas have practical implications – they are not pie in the sky – the country needs them! Persuading fund holders of this is a wholly different matter. I find myself saying "just trust me" – whilst being painfully aware that that is so unscientific.

As a blunt summary:

- Please don't underestimate how radical our agenda is.
- As we move into the next election all the political parties will be competing to put more officers on the street – this misses the point entirely!
- We need an agency independent of Government to press the crime prevention/design agenda.
- The Data Protection Act protects data not people. Access to point data for researchers needs to be mandated.
- Scientists really can reduce crime but at present politics gets in the way!

Delivery and Development of Forensic Services in the Metropolitan Police Service (MPS)



*Gary Pugh, Director of Forensic Services,
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The MPS Directorate of Forensic Services is playing an increasing role in making London safer by identifying the perpetrators of crime, providing evidence to eliminate or associate those suspected of committing crime and contributing to an understanding of criminality in London. The major expansion in the use of forensic services is driven by the success of forensic databases of fingerprints and DNA. The increased contribution is delivered in the MPS through the provision of in-house services, such as crime scene and fingerprint examination, and the integration and use of external forensic science services. A rapid and responsive service is required from all those involved in the forensic business with the emphasis on accuracy, speed and informing decision making at all stages of the investigative and criminal justice processes.

The increased use of forensic services is shaped by four strategic drivers:

- an increased level of intervention in all crime,
- a need to achieve a step reduction in the time taken for all forensic examinations,
- the use of forensic intelligence to link crimes and inform an understanding of criminality, and

- future developments in the digital and microchip technology that will allow for rapid identification of offenders, streamline processes and enable more effective interpretation of forensic evidence.

The establishment of forensic databases of fingerprints and DNA profiles in the last ten years has resulted in a significant and strategic shift in the focus of forensic services from being about the courts and evidence to being one of the primary means of identifying potential perpetrators in all types of crime.

The UK national fingerprint database consists of over 5 million fingerprint records with over eight hundred thousand unmatched latent finger marks from crime scenes. By contrast the national DNA database contains over 2.5 million DNA profiles and has over two hundred thousand unmatched DNA profiles from crime scenes. Even allowing for a high proportion of the finger marks and DNA profiles recovered from crime scenes that are not the perpetrator's the volume of unmatched fingerprint and DNA records represents a significant opportunity to solve crime. The power of the forensic databases is derived from the features of forensic information contained in fingerprints and DNA in that they

have the potential to uniquely characterise an individual, they do not change over time and can be recovered from crime scenes and victims. This is illustrated in a recent terrorist case where one of the key individuals involved was identified through the recovery of a finger mark on the packaging of a mobile phone recovered from a safe house and used to communicate the bomb warning. The individual was not known to anti-terrorist branch and had been entered onto the national fingerprint databases many years earlier for a relatively minor offence.

The collection of fingerprints or DNA is determined by statute and following the implementation of the most recent Criminal Justice Act, which allows for fingerprints and DNA to be taken from individuals arrested for recordable offences, sampling levels have increased in the MPS by 50%. Fingerprint examination and DNA profiling are complementary in their application. Fingerprint examination which is still the primary method of forensically tackling crime provides the only rapid means of confirming the identity of individuals through the ability in custody suites to "scan and search" the fingerprints of those arrested. On the other hand DNA profiling with its genetic origins allows for identity to be established through familial testing and there

are an increasing range of DNA tests that can be used in crime investigation; mitochondrial DNA that allows for the analysis of bones and hair, Y chromosome testing that has applications in sexually motivated crime where it is important to isolate the male component of a forensic sample and single nucleotide polymorphisms (SNPs) allow for analysis of degraded or old DNA samples. All of this technology can be brought to bear in the identification of victims of mass disasters. MPS Forensic Services has deployed teams to Thailand to assist in the identification of those tragically killed by the Tsunami. The increased power of forensic databases has encouraged greater use of forensic services. For example, the number of crime scenes examined by MPS forensic staff has increased to over 11,000 a month, mainly from burglary and volume crime. The intervention rate or the proportion of crime scenes examined in MPS is currently running at 90% of residential burglaries, 9% of street robberies and 10% of vehicle crimes. This has resulted in increases in the volume of forensic material recovered and most importantly the number of suspects identified.

Traditionally, forensic services contribute to serious crime investigation such as homicide and this is very much still the case with new technology allowing for the recovery of smaller and more challenging finger marks and DNA. The modern day Sherlock Holmes is normally attired in a white over suit, facemask and overshoes and uses a vast array of physical and chemical methods to recover forensic evidence. This technology includes specialised light sources and photography combined with a

range of chemical treatments that allow for invisible latent finger marks and traces of body fluids to be revealed through imaging and photo luminescent techniques. The more thorough and detailed capture of the crime scene provides an opportunity to understand the sequences of events and to test the account of witnesses or suspects. The use of computer presentation also allows technology to have other applications such as minimising the distress to the families of homicide victims by removing the body from the crime scene.

The response from Forensic Services is required in hours and days rather than weeks and months to minimise further offending. forensic services is now very much a 24/7 business at the front line of policing. The adoption of intelligence-led approaches by police forces and national agencies through the UK National Intelligence Model opens up an opportunity for Forensic Services to contribute to a wider intelligence picture. This could be through using fingerprints and DNA to track and identify those involved in criminal activity at national and international level. The MPS provides the support to national agencies involved in counter terrorism activity and since the dramatic events of 9/11 we have made extensive use of national and international databases to reveal identities and movements of individuals that have been key sources of intelligence. Using forensic databases of fingerprints and DNA and looking to other forensic information about criminal commodities such as firearms or drugs provides the opportunity to contribute to tackle criminal networks and reduce harm from serious and organised crime.

Future technology will challenge current models for delivery of forensic services with the potential to carry out DNA or Class A drug testing in the custody suite. We will be able to identify offenders while in custody and streamline processes to deal with offenders so that action can be taken quickly to minimise the risk of further offending and rehabilitate or deter offenders. There is also a wider agenda with respect to not only the use of technology but the roles of forensic staff in the police service. As well as using more sophisticated technology to locate, recover, analyse and interpret forensic material, forensic staff have an important role in dealing with the victims of crime and providing reassurance. Whether photographing a victim of an assault, dealing with someone who has been burgled or seeking to preserve a homicide scene at the family home of the victim, forensic staff require an awareness of the distress caused by crime. As part of the modernisation agenda the forensic staff will become the sole response to burglary in the MPS area negating the need for a police officer to attend. This approach is not only more efficient with a target to deal with burglary scenes within four hours but maximises forensic recovery and minimises the distress to victims allowing them quickly to return to a normal life.

Overarching all of this is the absolute need to maintain public confidence in the use of forensic services in general and the forensic databases in particular. In the UK we have the most well developed use of forensic databases in the world and the effective governance and operation of these databases is paramount to their continued use in the investigation and reduction of crime.

In discussion the following points were made:

Anyone arrested or detained for questioning can have their DNA collected for storage on the DNA national database without any prior need for permission. The use of part of the DNA molecule to predict human characteristics for criminal profiling is an area for research, but is not currently applied to crime prevention. Criminals deliberately contaminate DNA left at crime scenes. Smart water that sprays a burglar is a useful technique in linking criminals to a crime scene. Studies of repeat victimisation are under way. SOCA deals with organised crime related to Class A drugs, people trafficking (including people smuggling), firearms and money laundering. It has no primary responsibility for counter-terrorism, although abuse of red diesel, linked to the IRA and organised crime, forms part of SOCA's wider remit to break into and disrupt and destroy organised crime. To defeat crime in the future much better use must be made of science and not just the traditional reaction of putting more bobbies on the beat.