

Crime Statistics: How thoughtful statistics can guide policy

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Tonight's debate on World Statistics Day is intended to cover a number of issues, using crime statistics as a case study, and a jumping off point, for a wider discussion of the way that the political and statistical worlds come together. It is an unfortunate coincidence that today is dominated by one particular set of statistics generated by the political process, namely the various percentage cuts in the Comprehensive Spending Review. I was, for instance, interested to read on the BBC web site that my own department, the Home Office, will have a cash cut of 16.12903226% over the next four years. Not a penny more, not a penny less!

But on World Statistics Day there are far more important matters than trying to explain to the BBC the appropriate degree of rounding when reporting data. The Royal Statistical Society's motto "Aliis extendum" is roughly translated "Working it out what it actually means is someone else's problem". The two aspects of crime statistics I will be discussing this evening are intended to demonstrate that this is very much not the case. We might regard it as a win if politicians and policy makers take proper notice of statistical evidence in coming to their decisions. Working out what it actually means is certainly their responsibility. But good statistics will not only answer the questions, but will help guide thinking in much deeper ways. "Working out what it actually means" is not just for others, but is for statisticians and policy makers to do together.

The basic landscape

Crime statistics operate within a complicated landscape, and it is hardly surprising that they have been the focus of such attention. Every citizen and every organisation is potentially affected by crime and many are actually affected in practice. Getting a good overall picture of levels and trends, short and long term, in crime of all types requires subtle methodology making use of both administrative and survey approaches. In particular, key inputs into the process are the British Crime Survey (BCS), Police Recorded Crime, and administrative data obtained from police powers.

The BCS aims to provide a full reflection of the extent of crime for the population and crime types it covers. It does not cover the most serious crimes, and at present it only covers crimes among adults resident in households, though I will discuss this further below. Its basic methodology has remained stable over time, and so it gives a good indication of trends. Because it includes questions on a number of areas, such as drug use and various aspects of public perceptions, it is a very useful research tool to address issues beyond its core remit of quantifying crime.

Police recorded crime covers a wider population than the BCS and potentially all crime types, including commercial and financial crimes, including some so-called "victimless crimes". It has the potential to yield local-level crime information, and is also more localised in time, because the data are collected as offences are recorded and therefore it can provide an early indication of changes in trends. In the sense that there is no victim to report the crime in a survey, homicide is, after the fact, a "victimless crime" and police recording is the only source of information, especially since the status of a particular death may change, often years after it takes place, in the process of the police investigation. Police recorded crime is of course an important indicator of police workload, but may also be influenced by changes in legislation, operational policy and local priorities. As we shall see below, not all crime is reported to the police or recorded by them, and, as most of us are aware, recording practice has changed formally in 1998 and 2002, and also changes have occurred over longer time periods. Finally, by its very nature, police recording will yield only limited information about the circumstances of crime or how risk varies among population sub-groups.

What is a crime? Youth victimisation and extending the BCS

In response to recommendations by the Statistics Commission and the Smith review of crime statistics, the BCS is considering the appropriate approach to extending its coverage to victims under the age of 16. There has been an extensive period of feasibility work and development, with live data collection starting in January 2009. The first experimental statistics were released together with a call for further consultation on 17 June 2010. It is clear that there are a number of areas of crime where young people are disproportionately affected, and one needs to count younger victims to get a fuller picture. For example, the modal age group for mobile phone theft in 2007/08 was 14-17, and the number of thefts from those aged 10-13 was equal to all losses from that very large and important group in the population, those over the age of 55.

However, one of the most interesting issues raised for me in this experimental release was the simple question: what is a crime? Suppose that an 11 year-old punches his 13 year-old brother on the nose in a scuffle in the back garden, and the 13 year old kicks him back on the knee, breaking the skin but not very much. Now the 11 year-old limps back into the house and complains to his mother, who says "Did you hit him first? In that case shut up about it and don't do it again." But from a legal point of view two quite serious crimes have been committed. How, as statisticians, do we address this issue? It is not simply a question of deciding how to count crime; the ontological issue of what we consider to be criminal or even anti-social underpins our attitude to many social and political questions, and once we start to count something, we are prompted to think about it more deeply.

The BCS experimental approach tackles this matter head on, by considering four different possible definitions. The *all in law* approach counts all incidents that are

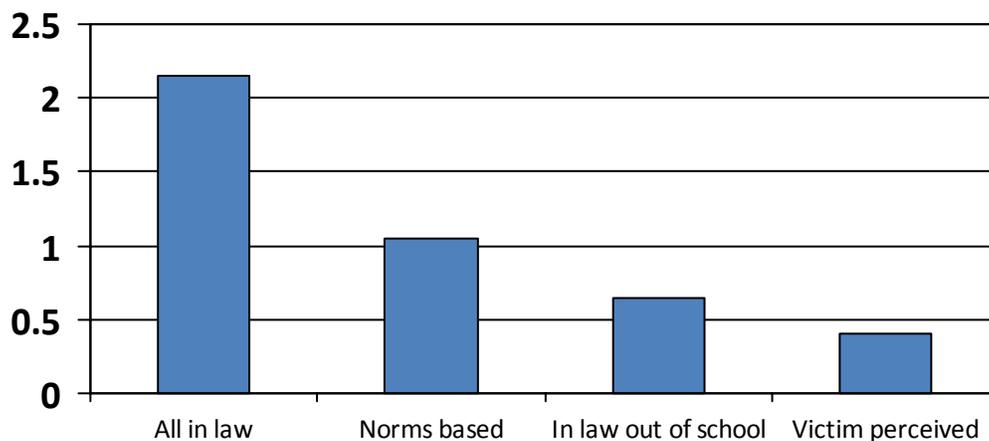
crimes in a strict legal sense, such as the two crimes committed by those brothers in their garden. The *all in law outside school* excludes incidents occurring in school. This is a rough approximation to the approach that low-level incidents are most dealt with by school authorities and are not recorded as crimes by the police. Of course the police would be involved in the most serious incidents in school, but these constitute a very small proportion of the total. A more nuanced approach is obtained by a *norms-based* method, which applies an explicit set of normative rules to exclude relatively minor incidents. These rules were developed from the findings of qualitative research with children that informed the development of the survey. And, last (and, not surprisingly least in terms of results) was to ask the victims themselves if they thought it was a crime! The table gives some examples of scenarios and the way that they would be recorded in the survey.

Example of types of incidents reported by children (for illustrative purposes only; these particular incidents were not necessarily actually reported).	All in law	Norms-based	All in law outside school	Victim perceived
At school, a child has their dinner money of 50 pence taken from them by someone who intended to steal the money. The money is returned some time later. The child considers the incident just something that happens and not a crime.	✓	✗	✗	✗
At school, a child has a favourite inexpensive toy taken from them on purpose and it is not returned. The child considers the incident a crime	✓	✗	✗	✓
In the street, a child is deliberately pushed and shoved but sustains no injuries. The child considers the incident just something that happens and not a crime.	✓	✗	✓	✗
At home, two siblings are playing and one of them deliberately smashes the other's toy. The child who has their toy smashed considers the incident wrong, but not a crime.	✓	✗	✓	✗
At school, two children get into an argument and one hits the other giving them a nose bleed. The injured child considers the incident something that just happens.	✓	✓	✗	✗
At school, a child's trainers are stolen from a school changing room. The child considers the incident a crime.	✓	✓	✗	✓
In the park, a child is punched and kicked by another child and sustains scratches and bruising. The child considers the incident wrong, but not a crime.	✓	✓	✓	✗
At a children's party, a child has a hand-held video game stolen after leaving it unattended. The child considers the incident a crime.	✓	✓	✓	✓
In the high street, a child has their mobile phone stolen from their pocket. The child considers the incident a crime.	✓	✓	✓	✓

Illustrative incident scenarios showing how they are counted under different approaches (from [BCS Experimental statistics on victimisation of children aged 10 to 15](#))

The remarkable part of the outcome is not that these methods of measurement give different results, but the extent of the difference. The "all in law" approach leads to an estimate of over 2 million crimes a year, but only about one-fifth of these are perceived by their victims as crimes. What do I make of this? All I would say in this context is that statistics open up a more important debate than just "How much crime against young people went unreported?" but force us to consider much more fundamental issues.

**Annual numbers of crimes against young people (millions)
as estimated by various methodologies in BCS Experimental
Statistics on Victimization of Children aged 10 to 15**



Cyber crime

Squabbles between offspring pre-date the evolution of *Homo sapiens*, but cyber crime has emerged much more recently. But here again is an area where statistics have an essential part to play in both supporting and leading the political process. What is cyber-crime anyway? Web society is changing our whole way of life, and we cannot afford to wait the long period of reflection that will be necessary to understand this change completely. But we can quickly sense that there are various types of e-crime. Some are just ordinary crimes committed using other means: bullying, harassment, stalking, fake begging letters, selling stolen goods on eBay, and so on. Some are crimes where our changed ways of living, working and doing business have opened up criminal opportunities, such as card fraud. Some are in some ways offences intimately bound up with the very existence of the web, such as hacking, theft of intellectual property through cyber attack, malicious software and identity theft. Of course the boundaries between these categories are fuzzy not least because our understanding of this whole area is rapidly developing.

Our current approaches to crime, including our methods of measurement, were not worked out in the cyber era and, not surprisingly therefore, are challenged by the rapid change to the web society. For example, if your credit card details are stolen, sold online, and used fraudulently, the bank will usually meet the losses and simply issue you with a new card, so you may not consciously feel that you yourself have been a victim of a crime. In 2009/10 the police recorded 27,139 cheque and card frauds, but data from both the UK Cards Association and the BCS show that there are millions of fraudulent transactions each year. We have not quite yet worked out how to count cyber crime; indeed we have not really worked out what to count.

How can statistics help? If we decide to count something we have to think about what it really is. So a very good first step, not as easy as it sounds, is to construct a proper taxonomy of e-crime. The statistics will give us an impetus to do that and a proper taxonomy will give us an impetus to figure out the right ways of tackling it. Once we have a good taxonomy, we can develop robust ways of measuring e-crime. Given the current debate about the reasons for changes in levels of crime, assessing not only the level of e-crime, but also the efficacy of interventions in the cyber domain is very important. Just as in the area of child victimisation, this is a domain where intelligent use of statistical thinking and strategy has a really important part to play in helping policy makers to understand and clarify the landscape of what is going on.

In conclusion, these two apparently rather different areas give a taste of the richness of the contribution that statistics can make. They indicate the deeper issues that have to be considered if crime statistics can give measures that are both reasonable and trustworthy, and the ways that good statistics are so important in the political process, in ways that readers may not have contemplated.

Experimental statistics on victimisation of children aged 10 to 15: Findings from the British Crime Survey for the year ending December 2009. Home Office Statistical Bulletin 11/10, 17 June 2010. Available at <http://rds.homeoffice.gov.uk/rds/pdfs10/hosb1110.pdf>

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