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Do police reduce crime?
Evidence from the 1829 introduction of the London Metropolitan Police

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Do police reduce crime? Evidence from the 1829 introduction of the London Metropolitan Police

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Key findings

Professional police forces are a fundamental part of criminal justice systems today. But how successful are police forces in reducing crime? This can be difficult for policymakers to measure because of the nature of the crime–policing relationship: policing affects crime levels and crime levels affect policing. We study this question by looking at the origins of this modern-day institution: the introduction of the London Metropolitan Police (the Met) in 1829. The Met was the first professional police force tasked with *deterring* crime. Our research uses historical records to evaluate the causal impact of this new institution on crime.

- The **1829 introduction of the London Metropolitan Police** created a centralised professional police force.

- The Met was characterised by a substantial increase in police numbers. It had full-time salaried employees and accountability to a government authority. Perhaps most importantly, officer tasks shifted from a focus on reactionary policing **towards crime prevention and deterrence**.

- Using newly digitised and geocoded crime and police data, we find evidence of a **significant reduction in violent crimes.**

- In contrast, a reduction in property crime is not visible (possibly due to off-setting increases in clearance and reporting rates).

- Many differences exist between the historical context and today. But the debates about police reform and evaluating the effects of policing concern many of the same topics: use of force, impartiality, quality and behavioural aspects, centralisation, and police force size.

Successfully evaluating the effects of police reform requires detailed crime data with multiple measures of crime, and (ideally) data on policing itself. This posed substantial challenges in our historical context, because of the difficulties in identifying and transcribing data. These should not be a barrier to evaluating police reforms today, where data are much more widely collected, and stored digitally.

Introduction

- *The basic mission for which police exist is to prevent crime and disorder as an alternative to the repression of crime and disorder by military force and severity of legal punishment.*

- *The ability of the police to perform their duties is dependent upon public approval of police existence, actions, behaviour and the ability of the police to secure and maintain public respect.*

- *The degree of cooperation of the public that can be secured diminishes, proportionately, to the necessity for the use of physical force and compulsion in achieving police objectives.*

- *The test of police efficiency is the absence of crime and disorder, not the visible evidence of police action in dealing with them.*

Principles of Law Enforcement, 1829

These modern-sounding, topical statements were in fact part of the nine *Principles of Law Enforcement* written by Sir Robert Peel in 1829, the year, as Home Secretary, he founded the London Metropolitan Police. Peel's ideas of policing are not just relevant today, almost 200 years later, they are also especially salient. In the early 19th century, these principles represented a profound change to the nature of policing. The 1829 introduction of the London Metropolitan Police included a substantial increase in police numbers, a shift away from the decentralised and community organised policing of the past, full-time salaried employees and accountability to a government authority. But perhaps more importantly, the primary task of the police shifted from reactionary policing towards crime prevention and deterrence. Subsequent police forces, not only across the counties and cities of England and Wales but also in the US and around the world, were modelled after this innovative institution: the first professional police force tasked with deterring crime.

Understanding the societal costs and benefits of policing is important to inform policymakers. In our recent research (Bindler and Hjalmarsson, forthcoming), we study the potential societal benefits of police. The primary task, as noted by Sir Robert Peel, is to 'prevent crime and disorder', that is to prevent and reduce crime (and with that the social cost of crime). Evaluating whether police achieve this goal is difficult due to the simultaneous nature of the crime–police relationship: policing affects the level of crime and crime affects the level of policing. We are able to study this question by going back in history to the introduction of the London Metropolitan Police in 1829. While the policy-relevant question – Do police reduce crime? – is certainly not new, we can study it in a new context. Specifically, by looking at the creation (instead of for example an expansion) of police forces, we can learn about whether (i) there is a crime reduction and (ii) whether it depends on institutional structures, force size or officer experience. Moreover, studying the introduction of the Met allows us to focus on little studied aspects of policing today, such as force administration and force quality (see e.g. Owens, 2020). As described in the following, we not only evaluate the effect of introducing just any police force, but also the effect of replacing the decentralised and local-community-organised policing of the past with a centralised and public force in which officer quality was monitored.

History of policing in London

Policing before 1829
To understand the innovations that the introduction of the Metropolitan Police brought to policing, one has to go back to pre-1829 forms of policing. From the 13th century onwards a

system of watchmen was often used, where towns were required to staff a local watch with local residents. This increasingly unpopular community policing system gave rise to a number of Watch Acts in the 1700s. These acts allowed for the avoidance of watch duty by paying a watch rate to hire watchmen. As this meant that the system of watchmen was locally funded, it inevitably led to differences in watch quality by local parish wealth and, by the early 1800s, increasing criticisms of incompetency, improper conduct and corruption.

Another, and more formally organised type of (public) policing was London's Bow Street Runners, dating to around 1750 (Emsley, 2009). By the end of the 1700s, the Bow Street Runners were essentially full-time policemen, located at the Bow Street House where they collected reports of crime incidents. In 1792, seven additional offices, modelled after the Bow Street Runners, were introduced in central London. These offices were staffed with three magistrates and up to twelve constables who primarily processed criminal cases (magistrates) and followed up on crime reports (constables).

Importantly, the **decentralised and community organised policing** that existed before the introduction of the London Metropolitan Police was **mostly reactionary**. A system of fees and rewards to add to rather poor salaries provided incentives to catch criminals, but not to deter them in the first place.

The introduction of the London Metropolitan Police in 1829

The London Metropolitan Police (the Met) was created in 1829 partly in response to concerns about crime but more importantly in recognition of the many limitations of the pre-Met forms of policing. Earlier calls to reform local parish policing had encountered strong resistance, until Sir Robert Peel brought the introduction of the London Metropolitan Police through Parliament.

The introduction of the Met on 29 September 1829 (with a catchment area of a 7-mile radius from *Charing Cross*, excluding the *City of London*) brought a number of fundamental changes to policing in London:

- First, there was a **sharp increase in the number of police**. Upon creation, 1,000 men were immediately hired and the Met grew quickly to 3,000 men by May 1830 (Fig. 1). The next large jump in numbers occurred in 1839, with the expansion of the catchment area to a 15-mile radius.

- Second, the introduction of this public institution came with a number of **organisational changes**: The Met was now **centrally organised** and offered a different **incentive structure** for example through the possibility of promotions. These changes were accompanied by a new **emphasis on force quality** and strictly **enforced behavioural guidelines** (e.g. with respect to alcohol consumption on duty or violent policing, Fig. 2).

- Third, the new police were now tasked with **deterrence**. In contrast to the reactionary type of policing pre-Met, officers were supposed to slowly walk a regular beat in recognisable uniforms with the aim of increased visibility to prevent crime from happening.

Figure 1. Weekly Hires to the Met

Metropolitan Police: Weekly hiring
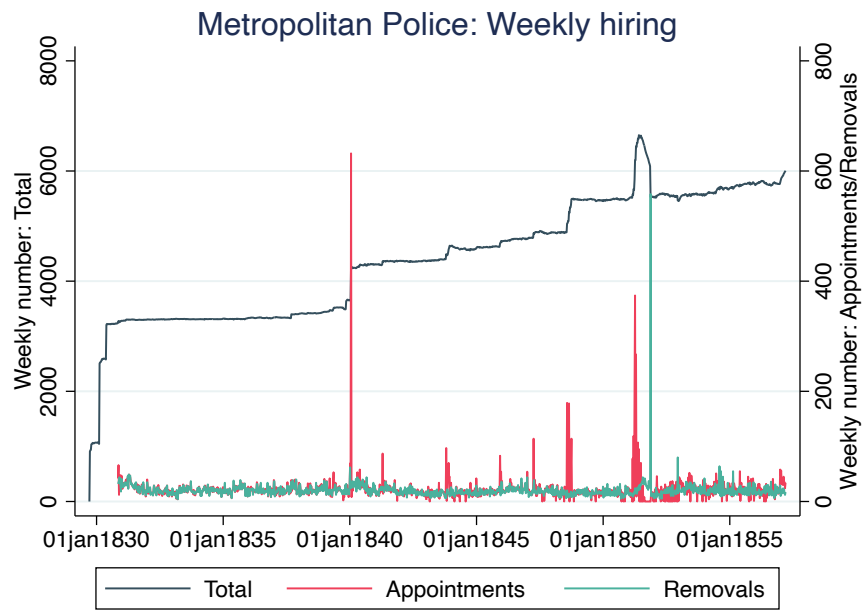
Notes: This figure shows the weekly number of total police, appointments as well as removals from the Metropolitan Police between 1829 (1830 for appointments and removals) and 1857. **Source:** Based on manually transcribed data from the Weekly State of the Metropolitan Police 1829–1857 available at the London National Archives (MEPO 4/1).

Figure 2. Weekly Dismissals from the Met

Weekly number of removals: All police divisions
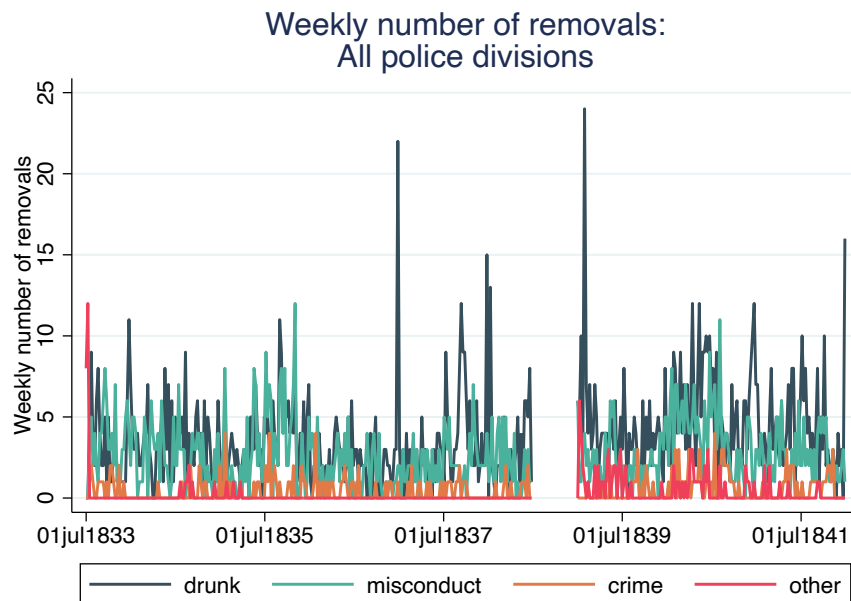
Notes: This figure shows the weekly number of dismissals split up by detailed reason (drunkenness, neglect or misconduct, criminal behaviour, other). **Source:** Based on manually transcribed data from the Home Office: Police Entry Books, Series I. Metropolitan Police sourced from the London National Archives (HO 65/11, 65/12 and 65/13).

The effect of the Met on crime versus crime statistics

The new police could have reduced crime via two channels: **deterrence** and **incapacitation**. The goal of this new public police was deterrence – through higher numbers and increased visibility, recognisable uniforms and constant patrols. At the same time, if more criminals were apprehended, this would have led to a reduction in crime through incapacitation – with those convicted being sentenced to prison, death or transportation to Australia. While one cannot disentangle these two effects empirically in our setting, both effects can be expected to increase over time with more experience and discipline of this new police force.

Effectively reducing crime clearly was (and is) the goal of the police. However, such a reduction can only be measured in recorded crime, and the new police could have also affected crime reports (not only crime itself). On the one hand, there could have been an increase in **clearance rates**: this would occur if the share of incidents in which a suspect was identified and caught increased with the new police. This is a particular concern when one uses administrative data, such as charges or trials data, for which a suspect needs to be identified. In other words, without a known suspect there wouldn't be any charge or a trial and without a charge or a trial taking place, the incident would not be recorded in such data sources. The new police were not explicitly tasked with clearing crimes, but this might have been relevant for certain crime categories, such as street crimes where the police are more likely to be present. On the other hand, there could have been an increase in **crime reporting**. With officers now walking regular beats, the costs of reporting a crime might be reduced, leading to an increase in reporting of existing crime; this could have been increasingly relevant as trust in the new police increased over time.

If true crime numbers were unchanged, an increase in clearance rates and/or crime reporting would lead to an increase in measured crime. This means that even if police reduce the amount of actual crime – as we might expect – the *measured* amount of crime would not reduce as much, or may even increase. If we see a fall in measured crime, it means that true crime must have fallen at least that much, but the exact amount cannot be known for sure.

We highlight here that these challenges – distinguishing true crime effects from crime reporting effects and separating deterrence and incapacitation – are not unique to this historical context. On the contrary, these are challenges that are often found in evaluations of contemporaneous crime data and reforms.

Measuring historical crime

To evaluate the impact of this new professional police force on crime, we make use of different historical data sources. First, we exploit the rich data from the ***Old Bailey Proceedings Online*** (Hitchcock et al., 2013), the digitised version of the reports of the sessions at the Central Criminal Court of London and Middlesex. From these data, we geocode crime incidents for all burglary, homicide and robbery trials between 1821 and 1837. We focus on these most serious crimes because they are the least likely to have been affected by changes to reporting behaviour (incentives for people to report serious crimes were always high). We then geocode the incidents to enable us to compare crimes that are dealt with inside the Met's catchment area (the treatment group) with those outside the Met's catchment area (the control group). For the main analysis, we collapse these data into a panel dataset by month and area (treatment vs. control).

Figure 3. Implementation of the reform
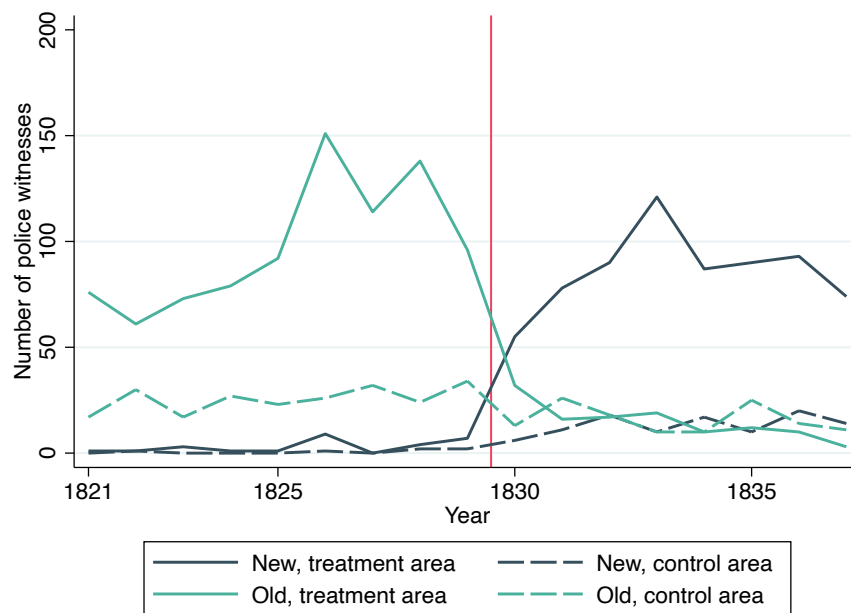
Notes: The figure shows the annual number of trials that, among the first five witnesses present at the trial, had at least one of either the new type or the old type of police both for the treatment group within the Met's catchment area (solid lines) and the control group outside the Met's catchment area (dashed lines). The vertical line represents the timing of the introduction of the Metropolitan Police in 1829. The underlying sample includes homicide, robbery, and burglary trials at the Old Bailey between 1821 and 1837. **Source:** Based on data from the Old Bailey Proceedings Online and own transcriptions/calculations.

An advantage of the Old Bailey trial data is that we can directly assess the **implementation of the reform** – a necessary first step before evaluating its impact. Did the reform actually change policing in London? Figure 1 above already shows the steep increase in the number of hires (with much higher numbers in policing than before the Met's introduction), but we can learn even more from the Old Bailey data. We use information from the trial reports on police witness characteristics to test for changes in number and type of police (at trial) after the Met was created, classifying different types as *old* types (mostly pre-Met, i.e. types of policing that existed before 1829 such as the Bow Street Runners) and *new* types (mostly post-Met, i.e. types that were introduced with the Met such as 'policeman'). Figure 3 visualises our results: after the introduction of the Met (marked by the vertical line), there is a steep increase in the number of trials with 'new types' of police witnesses in the treatment area (i.e. within the catchment area of the new police), accompanied by a decrease in those with 'old types' of police witnesses. In terms of magnitudes, our analyses find that the likelihood of a trial having a 'new' police witness increased by 57 percentage points for the inner areas of London, while the likelihood of having an 'old' police witness decreased by 49 percentage points. We interpret this as suggestive evidence of successful reform implementation: the new officers can be observed at court, and from that one can assume their presence in the streets.

As a second data source, we digitise **daily crime reports** from pre-existing police stations/magistrates. The original files ('Report or Account of the Proceedings of the several Police Offices') come from the National Archives and are available for the years 1828, 1830, 1831 and 1832. As the reports only cover the months January to April in 1828, we focus on these months for all years. The main advantage of these reports is that they contain both cleared crimes (charges with a known suspect) and uncleared crimes (incidents with an unknown offender), as well as all types of crime including misdemeanours. We code the number of violent, property and other crimes in the cleared and uncleared categories and collapsed the data into a panel dataset by day and station (including eight stations).

Evaluating the impact of the new police on crime

Our analysis of the London data begins with a difference-in-difference design using the **Old Bailey data**. Intuitively, this compares the number of crimes in the treatment (i.e. catchment) areas with the number of crimes in the control areas before and after the introduction of the Met, respectively. We find the following results:

- The number of **robbery** trials decreases by 40–46% after the introduction of the Met.

- This decrease is concentrated on the **inner areas** of London (within a 4-mile radius from Charing Cross). This decrease is statistically **significant** and **persistent** over time.

- There are no significant changes in the number of burglary and homicide trials.

- These results are **robust** to estimating different specifications, and they are not driven by confounding events such as the 1832 Cholera epidemic.

- A worry might be that crime simply moves from within the Met's catchment area to other areas, but there is no evidence for such crime displacement in the data: the results suggest a **net reduction** in crime.

The second London analysis is based on the **daily reports data** and emphasises the difference between cleared and uncleared crimes. These data allow us to assess whether the results from the Old Bailey for selected felony crimes generalise to other types of violent and property crime. We cannot geocode the data for this part of the analysis, so do not have a direct control group. Instead, we estimate the total effect on crime before and after the introduction of the London Met, zooming into a small time period (1828–1830) around the reform:

- There is a significant reduction in **violent crime**: 39% for all incidents combined and 26% for cleared incidents (charges).

- There is a significant decrease in **uncleared property crime** (incidents) by 25%, but at the same time a significant increase in **cleared property crime** (charges) by 21%.

- The two **opposing effects for property crime** may explain the absence of any visible property crime reduction (burglary) in the Old Bailey trial data. In other words, it appears that the new police reduced the amount of property crime taking place, and were more able to apprehend a suspect for the remaining crimes, meaning as many suspects being taken to court.

Results for counties outside of London

Our analysis of the London Metropolitan Police finds that violent crime decreases, with (at least in the court data) a less visible effect for property crime (potentially due to opposing changes in crime statistics). To assess whether these results generalise for areas outside of London, our research offers an extension in which we study the introduction of county police forces in England and Wales. By two different acts in 1839 and 1856, county justices were first allowed to create police forces on a voluntary basis before it became mandatory in 1856. We digitise data from the Annual Judicial Statistics and use existing information regarding the year in which county police forces were formed and their initial size to evaluate the roll-out of county police forces. This rollout is illustrated in Figure 4: 16 counties created police forces before 1840 (i.e. as soon as possible), 9 counties between 1841 and 1856, and the remaining 23 counties only in 1857 when mandatory (marked by the vertical line).

Figure 4. Implementation of the reform
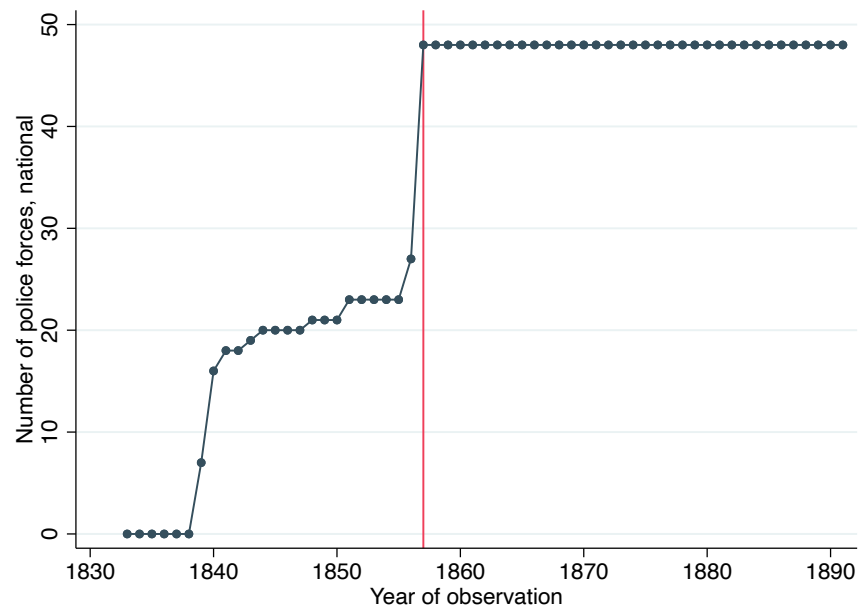
Notes: This figure shows the number of county police forces in each year for our analysis sample of 48 counties, i.e. excluding Middlesex, York, Suffolk, and Sussex. The vertical line marks 1857, the year when the creation of a county police force became mandatory. **Source:** Transcribed data from Stallion and Wall (1999).

We evaluate the effect of these new county forces in a difference-in-difference setup with the following key findings:

- Creating **just any** police force does on average not result in a significant decrease in crime.

- But forces that were **large enough** upon creation (close to a nationally recommended threshold of 1,000 people per officer) did significantly reduce crime (19% overall, 18% for violent crime).

Conclusions

The results of the Old Bailey data analysis show a decrease in trials for robberies by 40–46% corresponding to **12–15 fewer robberies per year** (in inner London). The results from the daily reports analysis show a decrease in violent crime overall by 39%. This corresponds to about **300 fewer violent crimes per year.** If indeed there is reporting bias, i.e. if actual crime was reduced but reporting of existing crime increased, these estimates are a lower bound and the true reduction could have been larger. The relative size of the violent crime reduction is comparable to that found in contemporary studies (e.g., Draca et al. 2011 who study the effects of police deployment after the 2005 London terror attacks).

For a better benchmark of the magnitudes in our research, one can compare the benefits of the reform (decrease in violent crime) to the cost (for which our best measure is the salary cost). By May 1830, there were around 3000 officers in the Met with a combined estimated salary of around £157,000 (measured in 1829 pounds. Bank of England inflation calculator: £1 in 1829 = £107.8 in 2018). A simple back-of-the-envelope calculation then suggests the following:

About **1 violent crime** per year was deterred by:

- **10 officers**, or;

- a salary cost of **£500** (measured in 1829 pounds, equivalent to about £54,000 in 2018).

These estimates are simplified in the sense that the reductions in crime might have been larger than what we can observe, and that we do not measure the marginal cost of the reform relative to what was spent before the Met. In other words, we simply refer to the salary cost of the new police instead of the differences between the cost of the old and the new system. The salary cost per crime averted *relative* to the previous system (for which we do not have the data) would be presumably lower than what we refer to here. Finally, one would ideally want to compare the costs of averting one violent crime to the benefits, i.e. the costs saved for the victim and/or society. However, measuring the cost of crime is inherently difficult even with modern-day data, and was infeasible for us in the historical context.

We can, however, conclude that the creation of the first professional police force was a success: (violent) crime decreased, and from a policy perspective, even an increase in clearance and/or reporting can be considered an achievement for an institution aiming to protect society.

Finally, while one has to be careful to draw direct recommendations from this historical context to today, with the many differences that naturally exist, we highlight two links:

(i) Today, there is an active debate about police reform and about evaluating policing and its effects. This debate in fact concerns many of the same topics as two hundred years ago as illustrated in Sir Robert Peel's *Principles of Law Enforcement* (cited in the introduction): use of force, impartiality, quality and behavioural aspects, centralisation, and police force size.

(ii) For this research, we collected historical data – and this data collection proved to be a huge effort. Such a barrier to policy evaluation should not exist in today's age of big data: if data are provided for research purposes, police reforms can be evaluated to provide a foundation for evidence-based policymaking.

References

Bindler, Anna and Randi Hjalmarsson (forthcoming) 'The Impact of the First Professional Police Forces on Crime', *Journal of the European Economic Association.*

Draca, Mirko, Stephen Machin, and Robert Witt (2011) 'Panic on the Streets of London: Police, Crime, and the July 2005 Terror Attacks', *American Economic Review*, 101(5): 2157-2181.

Emsley, Clive (2009) *The Great British Bobby: A History of British Policing from the 18th Century to the Present*. Trafalgar Square.

Hitchcock, Tim, Robert Shoemaker, Clive Emsley, Sharon Howard, Jamie McLaughlin, et al. 'The Old Bailey Proceedings Online, 1674–1913'. www.oldbaileyonline.org (version 7.1, April 2013).

Owens, Emily (2020) 'The Economics of Policing', In: Zimmermann K. (eds) *Handbook of Labor, Human Resources and Population Economics*. Springer, Cham. https://doi.org/10.1007/978-3-319-57365-6_146-1.

Stallion, Martin and David Wall (1999) *The British Police: Police Forces and Chief Officers 1829-2000*. Athenaeum Press, Gateshead, Tyne & Wear. pp. 262.