

Professionalising policing: seeking viable and sustainable approaches to police education and learning

Stephen Tong
United Kingdom



Abstract:

This paper will explore the 'police professionalization agenda' and provide a brief outline of the 'Police Qualification Education Framework' (PEQF) administered by the College of Policing (CoP) in the United Kingdom, discuss the art, craft and science as a platform for evolving professionalization in policing and finally consider the future of policing with advances in technology. I will argue that the police service not only needs to consider how technology will affect the roles and activities of the police but also the impact on the communities that the police serve.

Keywords: Police education, technology, future, professionalization.

Introduction

This paper is aimed at exploring the development of higher education in the United Kingdom in relation to policing. This analysis will link the development of education and professionalization to past, present and future challenges in policing. Recently there have been a number of high profile criticisms of policing in the UK, some have been based on historical events, others more recent incidents. From historical criticisms of policing a major event, the investigation of serious offences from murder to child sexual abuse, the review of the police response to these events has been damaging (MacPherson, 1999, Laming, 2003, Bichard, 2004, Jay, 2015; Scraton, 2016). More recently, budget cuts result in less police resources where traditional capacity or the ability of the police to respond is severely challenged (Brogden and Ellison, 2013). Policing problems are too complex for the police to be immune from future high profile criticisms. In this respect future criticisms are inevitable. At the same time for the police to be seen

as legitimate they must be less prone to scandals or high profile criticism, acknowledging short comings more quickly and being more transparent. The ability of the police to be innovated, prepared for the future and embrace change will determine the effectiveness of the police to limit high profile reviews or criticisms in the future. The professionalization agenda has a key role in supporting how the police evolve and change to meet forthcoming challenges.

Policing and professionalisation: setting the context

It is important to recognise how the police have learned in the past to understand the significance of current changes. The police service is one of the last public services in the United Kingdom to go through a professionalization and a comprehensive higher education accreditation process. Police training was 'in-house', free of charge to each officer at the point of

need and delivered by police trainers. The emphasis on training was directed entirely towards operational tasks where legal knowledge and the understanding of procedure were key. There were pressures around extracting full-time paid police officers from operational duty to attend training (Langmead Jones, 1999). Police officers were trained in regional training centres with no other occupational groups, no external higher education accreditation, a reluctance to recognise academic learning and an organisation with a rigid hierarchy with promotion based not on what you know but how many people you manage. The police constable however, continued to have considerable levels of discretion, little supervision with the power to exercise the law — or not — depending on their views, values and interpretation of the law (Reiner, 2013).

College of Policing and the Police Education Qualification Framework (PEQF)

In 1999 Janet Foster submitted evidence to the 'Home Affairs Committee on Police Training and Recruitment' setting out an argument for graduate recruit entry into the police service. Since then partnerships between universities and police services have grown steadily and down to local arrangements rather than any national coordination until relatively recently. This is in part due to resistance to introducing higher education into policing in a mandatory way (Aldersen, 1998; Foster, 1999; BBC 2016a), so the vision of CoP to introduce the PEQF should not be underestimated. This was underlined by the CoP PEQF consultation outlining the proposals with respondents signalling a mixed response with those in favour (46 %), opposed (32 %) and undecided (21 %), reflecting a majority not explicitly supporting the proposals (CoP, 2016). While it is important to acknowledge the current PEQF proposals do not reflect a graduate only entry requirement, it accepts recruits without a degree, but allows these recruits to achieve a degree as they go through their training.

The consultation put forward three proposals (CoP, 2016: 5):

1. Establishing a qualifications framework for policing, working in partnership with the higher education (HE) sector to set minimum education levels by practice or rank.
2. Developing opportunities for existing officers and staff to gain accredited and publicly recognised qualifications equivalent to their level of practice or rank.
3. Developing initial entry routes which involve self-funded undergraduate programmes, police force-funded graduate conversion programmes for graduates in other disciplines and degree apprenticeships.

The aim of these approaches is to recognise and reward the learning already taking place in policing, support engagement with 'what works' and to maintain accessibility to the police service (the inclusion of the apprenticeship entry allows non-graduate entry). These proposals represent a substantial departure from the past and represent an ambitious reform. With the aim of future-proofing the police, Alex Marshall (the CoP Chief Executive) explains the motive for these reforms:

'The nature of police work has changed significantly. Cyber-enabled crime, and the need for officers and staff to investigate and gather intelligence online and via information technology, has increased. Protecting vulnerable people has rightly become a high priority for policing. Officers and staff now spend more of their time working to prevent domestic abuse, monitor high-risk sex offenders and protect at-risk children' (CoP, 2016: 3).

The emphasis for Marshall is not only looking to the future needs of police officer education/training, but the demands currently facing the police..

The art, craft and science and professionalisation

The art, craft and science perspectives in policing are closely linked to ideas around police practice and professionalization (Tong and Bowling, 2006). Bryant et al. (2013) argued (prior to the CoP PEQF proposals) that policing already contained characteristics of a profession in terms of the role of police constables. There is resistance to the idea of associating HE level qualifications with policing. Featured in a recent BBC (2016a) article former Chief Constable, Norman Bettison, argued [that police degrees were] 'at the bottom of the priority list' for police. He said: 'The only degree a police officer needs is a degree of common sense — they'll learn on the job...

the public don't care about police having degrees. They want someone competent, caring and capable'. This view is concerned with what is expected of police officers and if this equates to a level of skill and knowledge that meets higher education levels of accreditation.

The emphasis on the importance of common sense as a central pillar of the role of the police constable is one of the arguments regularly presented against degree educated police officers. This view aligns with the idea of valuing the craft of policing as skills learned on the job alongside experience, but not acknowledging that many of these 'craft skills' (e.g. negotiation, discretion and judgement) or experiences are worthy of particular levels of accreditation. Some argue that higher recognition of these skills and abilities are long overdue (Bryant et al., 2013, Foster, 1999). Police officers have always been seen as discretionary decision-makers with the power to interpret and apply the law (Banton, 1964). Stelfox (2009) pointed to the increasing specialist nature of police roles and the substantial increases in legislation police officers need to understand with implications for criminal law and police procedures. So learning the 'craft' from experience is a feature of professionalism and development, but passing on validated knowledge and practice has long been the role of universities providing established professions with traditional practices associated with art, craft and science (e.g. education, law and medicine) with accredited learning and professional recognition (Wood and Tong, 2009; Flynn, 2002). The absence of capturing knowledge of best practice and passing it onto trainees effectively would make a nonsense of any practitioner learning. So the debate should be focused on whether policing is a sufficiently demanding occupation to require high levels of skills and knowledge to meet the requirement of a profession and the most effective way in passing on and capturing knowledge for future learners.? In considering these issues, it is also important to ask if the police are comparable to other professions including teaching, social work and nursing.? If this is the case, then the likelihood is that universities and higher education qualifications should have a role to play.

Views around the role of the police and traditional approaches to recruitment are particularly influential in the debate around professionalisation. The resistance to degrees is also associated with concerns that having degree entry could exclude traditional entrants into the police service. Police services in the UK often refer to the

aspiration of recruiting from and representing all communities appropriately. The police service still has substantial challenges in recruitment and are not recruiting or promoting female and ethnic minority officers in proportionate numbers (Silvestri et al., 2013). While widening participation rates in higher education have increased substantially (DoE, 2016), supported by central government policies, a greater proportion of female and Black and Minority Ethnic students enrol at university (Crawford and Greaves, 2015; UCAS, 2015a, UCAS, 2015b). Recruiting police officers aimed at proportionally representing communities should also consider graduate populations. The PEQF apprenticeship proposal also seeks to attract non-graduate recruits into the police service, accrediting their training after joining the police service. So the debate around the use of degrees should not just focus on graduate entry routes but the appropriateness of apprenticeships and accrediting police knowledge and skills at higher levels during initial training.

Discussions around professionalisation can be misconstrued as an argument for intellectual book worms who can patrol the streets using only their scientific knowledge for policing. Such views sometimes reject prospective police officers who are degree educated, perceived as not having common sense. To argue graduates do not possess common sense eliminates a large proportion of potential recruits. In truth police practice is about a mixture of art, craft and science in which the role of experience is crucial (Bowling and Tong, 2006). Policing does require knowledge, problem solving and analytical abilities comparable to other professions (Bowling and Tong, 2006). Local knowledge, practical and interpersonal skills are fundamental requirements for police officers, but these abilities are also worthy of academic credits as other professions have already demonstrated.

The importance of recognising policing as a profession is crucial for future recruitment and the recognition of the abilities of police officers. Police skills and abilities should have academic credits but research and knowledge generated by police officers, researchers and professional bodies should also have an important role to play in preparation for the future. The blending of experience, knowledge and research awareness, developing criticality are important in providing comprehensive support to research informed practitioners that minimizes mistakes. The future of police recruitment goes beyond accreditation and professionaliza-

tion, it also requires careful consideration of the type of future demands, skills, abilities as technological developments impact on society, crime and policing.

Policing and the future

Earlier this paper acknowledged that learning with a view to the future involves being proactive and this means attempting to plan ahead. By anticipating the future, the police can prepare in terms of developing the knowledge base they will need, understanding the potential challenges of new technologies and planning for how these changes can be managed and monitored. Crucially new technologies can influence the very model of policing that is implemented. With the future emphasis on the rapid adoption of new technology there are potential implications for particularly authoritarian approaches to automated crime control (Marks et al., 2015). Alternatively, in a context of dwindling resources and hard pressed public services technological advancement can offer cheap, clean technologies that could enhance police effectiveness and reduce the cost of policing in the future (Deloitte, 2015). Either way the importance of police legitimacy, accountability and appropriate use of force will be key to maintaining public support for the police. Where much of the technology will likely reside within the private sector (Deloitte, 2015), it is important that public policing develops and maintains its own expertise in these key areas so advances in technology can be managed and monitored appropriately. The professionalization agenda is key to supporting the police in responding to these developments.

Evolving technologies and policing

Technology will inevitably have an impact on the future of policing. Driverless cars, artificial intelligence, algorithms and automation all have the potential to transform policing practices. These changes have implications for police structure, leadership and practitioners working on the ground with new links to the private sector to meet demands. In Caless and Tong's (2015a) research on strategic police leadership in Europe, respondents were asked what they thought policing would look like in 5-10 years' time. Forty-nine out of the one hundred and eight respondents believed cybercrime and policing the internet would be the

most significant challenge to policing. One Nordic officer (Caless and Tong, 2015b: 200) said:

'...there should be more internet police, more police software engineers, more police fraud experts to follow money-laundering and more experts who know how to harness science in the service of policing. If we can do all that, and cooperate internationally, we may make a difference.'

Policing has adopted new equipment from public order equipment through to Tasers that have raised questions about the proportional use of force (Marks et al., 2015). The use of robots was recently illustrated in Dallas when a sniper shot and killed five police officers (Thielmann, 2016). In response and with concern for the lives of others the chief officer ordered the use of the robot to denote a bomb that killed the sniper. Elizabeth Joh, law professor at the University of California at Davis explained (Thielmann, 2016):

'Lethally armed police robots raise all sorts of new legal, ethical, and technical questions we haven't decided upon in any systematic way... we typically examine deadly force by the police in terms of an immediate threat to the officer or others. It's not clear how we should apply that if the threat is to a robot — and the police may be far away... In other words, I don't think we have a framework for deciding objectively reasonable robotic force. And we need to develop regulations and policies now, because this surely won't be the last instance we see police robots.'

This event opens new questions around ethical dilemmas, accountability and the use of technology. Although this is thought to be the first time a robot has been used in the United States for lethal force (Thielmann, 2016), the use of robots in policing looks set to increase. Robots are now being used in Californian and China for policing tasks. Robots can be rented for lower than the minimum wage but manufacturers claim these robots will enhance security rather than replace security jobs.

The potential for surveillance is substantial with CCTV cameras, an increasing number of DNA, intelligence and image databases. The FBI recently reached a total of 430 000 iris scans in a 'pilot' (BBC, 2016b). The pilots

reportedly occurred in California are set to be expanded to other agencies while the private security systems and airports already use eye retina scans extensively (Lecher and Brandom, 2016). Eye retina scans are used at road blocks because they are seen as more practical and quicker than finger printing. Clearly as these developments occur issues around proportionality, accountability and who owns information become increasingly important particular in a more pluralized policing landscape (Marks et al., 2015). Critically, public engagement in the use of potentially invasive technologies is important to maintain legitimacy in policing methods and develop widespread understandings on the impact of technology more widely. The power of surveillance at the time of writing is being exercised following Donald Trump's travel ban to the US by citizens of named countries. Federal Judge Ann Donnelly, granted people who had valid US visas but were due to be deported, a stay on deportation (Jalabi and Yuhus, 2017), followed by the sacking of Sally Yates (the Acting Attorney General) for not following executive order on the travel ban. However, the judge's order was reportedly being ignored by some border agents (Helmore, 2017), raising not only the use of technology in social sorting but the relationship between political decision-making and the courts.

Surveillance can come in many forms, often associated with fixed CCTV cameras, more recently the use of drones has become more prominent in the media. One UK police service has 5 drones with 38 trained staff. Drones can be used for tracking and a variety of other operational police uses including the capacity to dispense CS gas. However, it is not just the police using these devices. Over 900 complaints of inappropriate public use of drones range from peeping toms, supplying prohibited items to prisoners, use of drones by paedophiles through to nuisance calls have been reported. It is the use of drones and near misses with aircraft that tends to attract the most significant headlines. While the current use of drones in the UK is covered by the 'dronecode' with a government consultation which (may) effects how they are regulated. The responsibility to enforce the dronecode lies with the police service.

Digital evidence is often contained on digital devices and manufacturing companies take the issue of privacy extremely seriously as demonstrated by Apple's refusal to provide access to the Federal Bureau of Investigation (FBI) of a phone used by Syed Farook

involved in an attack in California resulting in 14 fatalities. Apple's CEO Tim Cook stated 'The United States government has demanded that Apple take an unprecedented step which threatens the security of our customers. We oppose this order, which has implications far beyond the legal case at hand.' (Ackerman, 2016). Digital evidence is seen as a key area in one of the many technological changes the police have to manage. From challenges in overcoming encryption used in computers and various storage devices, the use of the cloud and the ability to move and delete potential evidence quickly and overcoming anti-forensics tools are some of the challenges facing investigators (POST, 2016). It is also providing public services with the challenges of sustaining the skills demanded to respond to these developments: 'Anecdotal reports suggest that skills retention is a problem in some police forces, although data on this are not currently collected. Skilled individuals are highly sought after and companies can often offer higher salaries for similar work' (POST, 2016: 3). Accessing data on evolving devices, meeting the skills needed for the police to capture evidence and commercial perspectives on the need for privacy is likely to create tensions between public and private sector agendas.

So whether it is industrial competitiveness to produce the best intelligence system, algorithms, automation or surveillance operations, in the context of providing resources for law enforcement agencies or technologies to be used for leisure, the lead will be taken by the private sector. So in the technological race private sector companies committing huge resources to research and development will have the capacity and the skills to develop and maintain these technologies. The police will not compete in the sole development of these technologies. However, it does not take much imagination to see how the impact of technology will change the arena in which crime and policing is practiced. If the police do not possess the knowledge and expertise to effectively engage with the procurement and management of technology used, it is perhaps predictable that strategic direction through to tactical responses will risk mistakes in future. With this in mind the police will not only need to develop strong partnerships with private technology companies but also develop their capacity to manage these new technological challenges through support from universities.

Professionalisation in the context of automation

Muir (2016b) has explored some of these issues particularly in relation to police professionalisation. He points to the timely work (given the recent moves to professionalise the police) of Susskind and Susskind (2015) in their book 'The of Future of Professions'. Muir (2016b) makes particular reference to their analysis that both 'experts' and established professions are at risk, given the cheaper more transparent capabilities of the internet. Susskind and Susskind (2015: 307) caution:

'...inaction as well as action is a choice. If we choose to do nothing, and we decided to default to our traditional ways and discard the promise of technological change for fear, say, of rocking the boat, then this is a decision for which the later generations can hold us accountable'.

Applying this view to a policing context, it emphasises the importance of not just focusing on the recognition of traditional policing skills and knowledge but embracing profession needs in relation to technological developments. More broadly it points to how society more general generates and shares knowledge.

Drawing on the work of Frey and Osborne (2013), Muir (2016a) suggests policing is less susceptible than other roles to automation when they are required to engage with the public in often challenging circumstances, he argues these tasks require:

'1) deep and broad human perception that is capable of making sense of highly unstructured data, 2) an ability to respond to sudden events in a physically agile way, 3) an ability to interpret human heuristics and to relate and communicate on an emotional level with other people, and 4) the capacity to make moral judgments'.

Muir (2016a) sums up

'The technological revolution will transform the way the police work. Before that happens we need to openly debate the implications. Even if robotics and algorithms can make policing more effective and efficient, the public will still need to be convinced that their application in any particular instance would be right.'

It is these debates, it is argued, that are absent from the FBI's extensive use of iris scans. Similarly, the use of robots, Tasers and various methodologies contributing to surveillance creep with technology changing the face of policing with little consultation, yet claims of police legitimacy regularly made. Marks et al. (2015) points to the dangers of criminal justice system changing from a traditional individualised model with elements of due process to a risk based actuarial model of justice that 'minimises human agency and undercuts the due process safeguards'. From this perspective genuine community engagement and public legitimacy is paramount to maintaining a fair and balanced criminal justice system.

Conclusion

So to summarise, the police service has not had sufficient recognition for the knowledge and skills developed within its ranks with an absence of external accreditation. The high profile criticisms of the past will continue if the police do not adapt and learn lessons from the past, while being able to develop its own ability to self-analyse and improve. The professionalization process led by the CoP will need to recognise current knowledge, skills and abilities but also look to the future in preparing officers. New skills and knowledge are required to embrace technology with the ability to be effective learners, as changes which continue to take place post qualification will become more important. This will hopefully develop the research-informed practitioner that will embrace all forms of knowledge to help their decision-making alongside their experience and local knowledge. This paper is not arguing that the traditional policing skills of the past are not needed anymore, rather that police officers will need additional skills to use and respond to technology effectively. To prepare for the future, the police will need to understand the implications for technology for the service and society and make necessary preparations to have sufficient knowledge and personnel in place. Universities can support the police service in developing research and designing curriculum to sustain a viable professionalisation in the context of rapid technological change. It is this contribution from universities that is often overlooked by the critics of professionalization. Perhaps moving into what is termed as the 4th Industrial Revolution we can be guided by Johnston's thoughts on optimal policing:

'a system of security which is neither quantitatively excessive (to the detriment of alternative social values and objectives) nor qualitatively invasive (to the detriment of public freedoms) and which satisfies conditions of public accountability, effectiveness and justice for all' (Johnston, 2000: 180)

While effective enforcement will become increasingly important as career criminals and citizens gain access to more technology, the police will need to respond quickly and proactively in anticipating future challenges. Using technology in a policing context does not have to be solely about control of the masses or enforcement, but can be used to create greater freedoms, greater transparency (of public and private services) and reduce costs.

References:

- Ackerman, S. (2016). 'FBI escalates war with Apple: 'marketing' bigger concern than terror'. *The Guardian*. Retrieved from <https://www.theguardian.com/technology/2016/feb/19/fbi-apple-san-bernardino-shooter-court-order-iphone>
- Aldersen, J. (1998). *Principled Policing*. Winchester: Waterside Press
- Banton, M. (1964). *Policeman in the Community*. London: Tavistock Publishers.
- BBC. (2016a). 'All new police officers in England and Wales to have degree's. 15th December 2016. Retrieved from: <http://www.bbc.co.uk/news/uk-38319283>
- BBC. (2016b). 'Privacy row over FBI iris scan 'trial''. 13 July 2016. Retrieved from: <http://www.bbc.co.uk/news/technology-36783515>
- Bichard, M. (2004). *The Bichard Inquiry Report*. London: Stationery Office
- Brogden, M. and Ellison, G. (2013). *Policing in an Age of Austerity: A Postcolonial Perspective*. London: Routledge.
- Bryant, R., Cockcroft, T., Tong, S. and Wood, D. (2013). 'Police Training and Education: Past, present and future'. In Brown, J. (ed.) *The Future of Policing: Papers prepared for the Stevens Independent Commission into the Future of Policing in England and Wales*. 383-397. London, Routledge.
- Caless, B. and Tong, S. (2015a). 'Strategic Police Leadership across Europe: Empirical Study'. *European Police Science and Research Bulletin*. Issue 12 — Summer 2015. 13-17. Retrieved from: <https://www.cepol.europa.eu/sites/default/files/science-research-bulletin-12.pdf>
- Caless, B. and Tong, S. (2015b). *Leading Policing in Europe: An Empirical Study of Police Leadership*. Bristol: Policy Press.
- College of Policing. (2016). *Developing and delivering an education qualification framework for policing: The College of Policing response to the consultation*. December 2016. Ryton: College of Policing Ltd.
- Crawford, C. and Greaves, E. (2015). *Ethnic minorities substantially more likely to go to university than their White British peers*. Institute for Fiscal Studies. 10.11.15. Retrieved from: <https://www.ifs.org.uk/publications/8042>
- Deloitte. (2015). *The Digital Policing Journey: From Concept to Reality, Realising the benefits of transformative technology*. Retrieved from: <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/public-sector/deloitte-uk-ps-digital-police-force.pdf>
- DoE. (2016). *Participation Rates In Higher Education: Academic Years 2006/2007 — 2014/2015*
- (Provisional). SFR45/2016. 15th September 2016. Retrieved from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/552886/HEIPR_PUBLICATION_2014-15.pdf
- Flynn, N. (2002). *Public Sector Management*. Fourth Edition. London: Pearson Education.
- Foster, J. (1999). 'Appendix 22: Memorandum by Dr Janet Foster, Institute of Criminology, University of Cambridge'. in Home Affairs Committee. *Police Training and Recruitment: Volume Two*. 382-391. London: The Stationery Office..
- Frey, K. B. and Osborne, M. (2013). The Future of Employment: How susceptible are jobs to computerisation?. Retrieved from: http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf
- Helmore. (2017). 'Border agents defy judges' orders targeting Trump travel ban, lawyers say'. *Guardian online*. 29/01/2017. Retrieved from: <https://www.theguardian.com/us-news/2017/jan/29/customs-border-protection-agents-trump-muslim-country-travel-ban>

- Jalabi, R. and Yuhas, A. (2017). 'Federal judge stays deportations under Trump Muslim country travel ban'. *Guardian online*. 29/01/2017. Retrieved from: <https://www.theguardian.com/us-news/2017/jan/28/federal-judge-stays-deportations-trump-muslim-executive-order>
- Jay, A. (2015). *Independent Inquiry into Child Sexual Exploitation in Rotherham 1997-2013*. Rotherham: Rotherham Metropolitan Borough Council
- Johnston, L. (2000). *Policing Britain. Risk, Security and Governance.*, Harlow, Essex: Longman
- Laming, Lord. (2003). *The Victoria Climbié Inquiry*. Norwich: HMSO, CM5730
- Langmead Jones, P. R (1999). *On a Course: Reducing the impact of police training on availability for ordinary duty*. Police Research Series paper111. London: Home Office
- Lecher, C and Brandom, R (2016). *The FBI has collected 430,000 iris scans in a so-called 'pilot program'*. 12 July 2016. Retrieved from: <http://www.theverge.com/2016/7/12/12148044/fbi-iris-pilot-program-ngi-biometric-database-aclu-privacy-act>
- Macpherson, Sir William. (1999). *The Stephen Lawrence Inquiry*. London: TSO.
- Marks, A., Bowling, B. and Colman, K. (2015). 'Automatic Justice? Technology, Crime and Social Control'. In R. Brownsword, E. Scotford and K. Yeung. (eds.) *The Oxford Handbook of the Law and Regulation of Technology*. Oxford: Oxford University Press. Retrieved from: <file:///C:/Users/st37/Downloads/SSRN-id2676154.pdf>
- Muir, R. (2016a). 'Robocops: are the police robots coming?' *The Police Foundation Blog*, 30 September 2016. Retrieved from: <http://www.police-foundation.org.uk/news/227/184/Robocops-are-the-police-robots-coming/d,Blog-main>
- Muir, R. (2016b). 'It's time to face up to the challenge of policing in a digital age'. *The Police Foundation Blog*. 8 December 2016. Retrieved from: <http://www.police-foundation.org.uk/news/240/184/It-s-time-to-face-up-to-the-challenge-of-policing-in-a-digital-age/d,Blog-main>
- NPCC. (2016). '*Communications data a vital resource in many areas of police work*'. 2 June 2016. Retrieved from: <http://news.npcc.police.uk/releases/communications-data-a-vital-resource-in-many-areas-of-police-work>
- POST. (2016). *Digital Forensics and Crime*. Number 520 March 2016. London: Parliamentary Office of Science and Technology (POST).
- Reiner, R. (2013). *Politics of The Police*. 4th edition. Oxford: Oxford University Press.
- Sample, I. (2017). 'AI watchdog needed to regulate automated decision-making, say experts'. *The Guardian* 27/01/17. Retrieved from: <https://www.theguardian.com/technology/2017/jan/27/ai-artificial-intelligence-watchdog-needed-to-prevent-discriminatory-automated-decisions>
- Scraton, P. (2016). *Hillsborough: the truth*. London: Transworld Publishers.
- Stelfox, P. (2009). *Criminal Investigation: An Introduction to Principles and Practice*. Cullompton: Willan Publication.
- Silvestri, M., Tong, S. and Brown, J. (2013). Gender and police leadership: time for a paradigm shift?. *International Journal of Police Science and Management* 15, 1 61-72.
- Susskind, R. and Susskind, D. (2015). *The Future of Professions: How Technology will Transform the Work of Human Experts*. Oxford: Oxford University Press.
- Thielmann, S (2016). 'Use of police robot to kill Dallas shooting suspect believed to be first in US history'. *The Guardian* 08/07/16. Retrieved from: <https://www.theguardian.com/technology/2016/jul/08/police-bomb-robot-explosive-killed-suspect-dallas>
- Tong, S. and Bowling, B. (2006). 'Art, Craft and Science of Detective Work'. *Police Journal*. Volume 79 No 4. 323-329.
- UCAS. (2015a). *End of Cycle 2015 Data Resources DR2_019_06 Applicants by ethnic group*. Retrieved from: ucas.com
- UCAS (2015b). '*End of Cycle 2015 Data Resources DR2_014_06 Applicants by sex*'; Retrieved from: ucas.com
- Wood, D. and Tong, S. (2009). 'The future of initial police training: a university perspective'. *International Journal of Police Science and Management*. Vol. 11 No 3. September 2009. 294-305.