

Rethinking Crime, Harm, and Corporate Responsibility: Lessons from the Post Office Scandal

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Abstract: The Post Office Scandal is recognised as one of the most significant miscarriages of justice in British legal history. Using a conceptual review grounded in Zemiological theory this article explores the scandal, arguing that traditional frameworks of criminology fail to capture the full scope of corporate crime. The article begins by tracing the origins of the scandal to the flawed implementation of the Horizon IT system, examining how institutional failures by Fujitsu, the Post Office and the UK Government enabled two decades of systemic injustice. It then applies the theory of Zemiology to challenge dominant constructions of crime, highlighting how the pursuit of profit and poor corporate governance permitted a range of ontological harms to sub-postmasters. The role that inadequate safeguarding in private prosecutions played in the scandal is then considered, drawing comparison to the practices of the RSPCA. Lastly, the article considers the enduring legacy of the scandal and questions whether institutional trust can be rebuilt. The article concludes that whilst reparations and reforms have been made, the Post Office Scandal has caused irreparable damage to the integrity of trusted institutions.

Keywords: The Post Office Scandal, Zemiology, harm, corporate crime, sub-postmasters, miscarriage of justice.

INTRODUCTION

The Post Office Scandal (POS), which has continued to unfold over nearly 3 decades stands as a significant case of corporate crime. Deemed the most prevalent miscarriage of justice the UK has even seen, the case presents crucial insight into the extent of harms that can occur through instances of corporate malpractice and an absence of accountability. Firstly this article outlines the origins of the POS in relation to the failures contributed by Government, the Post Office (PO) and Fujitsu. Secondly, it will consider how the theory of Zemiology challenges dominant constructions of crime that often fail to capture the true extent of harmful actions. In relation to this, the goals of corporations will be presented and the necessity for effective corporate governance will be identified as key lesson in order to prevent harm. Thirdly, the article demonstrates the ontological harms that were caused by the biased and unjust investigations of sub-postmasters (SPMs). Fourthly, it will discuss the differences between regulations for private and public prosecutions, identifying the lesson that reform and improved safeguarding is desperately needed in order to prevent future harms. Lastly, the industry legacy of the corporations involved in the scandal will be highlighted and will conclude that the POS may have caused irreparable harm to these legacies.

TRACING THE ORIGINS OF THE POST OFFICE SCANDAL

The origins of the POS were founded in 1992, when the former Conservative Government announced that the PO systems were to become fully automated. By 1996 the company Fujitsu, formerly International Computers Limited, had won the Private Finance Initiative (PFI) contract to modernise the PO systems in an attempt to cut costs and reduce instances of fraud (Wallis, 2022). PFI contracts were introduced to deliver public services through private investment, with the assumption that this would both modernise and drive efficiency through market competition (Broadbent & Laughlin, 2005). However, as Wallis (2022) reveals, Fujitsu had ranked poorly in the scoring criteria created to measure the strengths of each contract, placing in the bottom 8 of 11 criteria and was selected primarily as it was the lowest in cost for the Government.

Moreover, the complexity of automating PO systems had been seriously underestimated. Fujitsu code developers were incapable of producing a robust, working system due to inexperience and poor management and the project suffered from poor coordination between Fujitsu and the PO (Wallis, 2022). Wallis (2022) reports that consideration was given to terminating the project entirely, however, the potential political fallout was deemed too significant to proceed with this option. The system, Horizon, was deemed inadequate and unsuitable for service by the PO's Horizon Programme Board in March 1999, despite this, it was fully implemented into PO branches by October of that year (Wallis, 2022). These decisions that privilege short term fiscal savings over long term

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institutional resilience were indicative of the systemic pressures of neoliberalism. This ideology reinforces structural conditions conducive to harm whilst also weakening the systems that are meant to reduce harm (Pemberton, 2015).

RETHINKING THE NOTION OF CRIME AND HARM THROUGH ZEMIOLOGY

Up until this point, although failings had occurred, no 'crime' had actually been committed. The conduct of Fujitsu and the PO in the implementation of inadequate software was perhaps immoral, but at this stage, it would not be considered illegal. The concept of 'crime' is traditionally constructed within dominant political, academic and legal frameworks, with an emphasis on individualist notions of intent (Pemberton, 2015). In expanding the notion of crime to consider harm through the lens of Zemiology, attention can be drawn to acts that are not punished but are harmful enough to be considered punishable (Tombs, 2018). For Pemberton (2015), the study of Zemiology aims to uncover whether harms could have been prevented, rather than questioning whether or not harm was intended. Additionally, consideration is paid to whether or not harms were caused due to the dominant political and economic structures that exist within society (Pemberton, 2015).

Rothe & Kauzlarich (2018) highlight that institutions do not act with intent, rather that the goals of the institution may form the sentiment of the actors within them. The goal of any corporation is to maximise profits and reduce losses, however corporations are not always successful in their calculations of how to best achieve these goals (Pearce, 2009) as is clear in the case of the POS. Pemberton (2015) argues that these types of harms, caused by omissions, failures to act, or moral indifference are often overlooked or ignored as they do not align with conventional notions of criminality. The POS illustrates the inadequacy of traditional concepts of crime as outlined by Pemberton (2015), arguing that the narrow scope that it presents often fails to capture the full range of societal harms perpetrated by corporations due to its focus on individualistic intent. An important lesson can be identified, corporations that practice effective governance foster a positive corporate culture and ensures adequate safeguards are in place (Christie, 2022). The absence of effective corporate governance allowed inadequate management practices and IT auditing (Christie, 2022), with these in place the harms caused to SPMs could have been prevented. In the

case of the POS, the capitalistic goals in the pursuit of profit and institutional negligence of the parties involved led to decisions that failed to prevent SPMs from harm.

ONTOLOGICAL HARM AND THE IMPACT ON SUB-POSTMASTERS

The next set of failings occurred as the PO began to prosecute SPMs from the early 2000s up until 2015, following a series of deeply flawed investigations conducted by the Post Office Investigation Branch (POID), later renamed to Security Group (Wallis, 2022). The POID predates the police, awarded with specialised powers to access the Police National Computer—and can be classed as the oldest globally recognised criminal investigation force (Wallis, 2022). SPMs were liable under contract to pay back any discrepancies their branch sustained, therefore, POID investigators acting under the false belief that Horizon could not be at fault were able to prosecute SPMs on false accounting and theft charges, despite there being no actual evidence of theft (Wallis, 2022). Many SPMs knowing they were innocent, pled guilty to lesser charges in the hope of avoiding lengthy prison sentences, this caused detrimental harms as they lost their livelihoods, community standing, and the right to a fair trial (Wallis, 2022).

SPMs suffered a number of harms which are outlined in Pemberton's (2015) definition of ontological harms. Ontological harms refer to circumstances that compromise self-realisation and fall under 3 main categories physical/mental health, autonomy and relational (Pemberton, 2015). Gowns *et al.* (2024) found the SPMs involved in the POS portrayed disturbingly high rates of PTSD and depressive symptoms, these rates were comparable between those who had been wrongly accused and those who had been convicted. At least 13 individuals died by suicide, with a further 10 attempting suicide (Post Office Horizon IT Inquiry, 2025a). Autonomy enables an individual to achieve self-realisation through control of their circumstances. For many, this includes deriving a sense of worth from their 'contribution to the division of labour... to which they belong', when this contribution is undervalued further harms are incurred (Pemberton, 2015, p.29). SPMs suffered harm to their autonomy as they were stripped of their ability to achieve self-realisation following suspension from their role. Moreover, as the PO was a powerful corporation, SPMs had limited control over their circumstances as demonstrated by the desperate act of accepting charges they knew to be untrue. As a consequence,

this affected their participation and access to social relationships, an issue of relational harm (Pemberton, 2015). By accepting a guilty plea many SPMs lost the social standing within their communities, receiving an 'other' status, this affected their ability to achieve self-realisation as their identities had been misconstrued to the community around them (Pemberton, 2015, p.31).

PRIVATE PROSECUTIONS AND INADEQUATE SAFEGUARDS

There is a general right within English law that any private individual or organisation may pursue private prosecutions without involvement from the Crown Prosecution Service (CPS) (CPS, 2024). Sam Townend KC, Chair of the Bar Council (2024) highlighted that prior to the implementation of Horizon the number of prosecutions brought forward by the PO were relatively low, the failure to recognise the stark rise in PO prosecutions is a cause for concern. It has been suggested that organisations that put forth a high number of private prosecutions should be subject to inspections (House of Commons Justice Committee, 2020). Under Section 3 of the Criminal Procedure and Investigations Act (CPIA) 1996 prosecutors are required to disclose evidence that could potentially support the defence's case or undermine the prosecution's. In the case of *Bates v Post Office Ltd* Lord Justice Fraser ruled in favour of the claimant SPMs and found that both the PO and Fujitsu had failed to disclose evidence that the Horizon system was known to have bugs, errors and defects, contributing the wrongful conviction of SPMs. The ruling determined that the PO had improperly relied on the notion that Horizon was running efficiently which led to the failure of a thorough investigation into the discrepancies and that the convictions were unjust.

Following a series of miscarriages of justice in the 1970's and 1980's, notable cases are the Guildford Four and the Birmingham Six, the CPS was formed in order to ensure impartiality (Darlington, 2024). The initial embodiment of these principles originated in the 1980's in response to the Report of the Royal Commission on Criminal Procedure, chaired by Sir Cyril Philips which determined separation was needed between police investigation and prosecution in order to promote fairness and unify prosecution processes (The Royal Commission on Criminal Procedure, 1981). Thus, the Prosecution of Offences Act 1985 was created, providing the necessary legislation for the establishment of the CPS. The CPS is bound to the principles set out in the Code of Crown Prosecution

which advocates for independence, impartiality and the right to a fair trial (CPS, 2018). Child & Rogers (2024) highlight that private prosecutors often operate with a concerning lack of oversight and safeguarding, suggesting a general failure in the way in which private prosecutions are carried out.

THE NEED FOR REFORM

Reforming the way in which private prosecutions take place has been an important lesson identified from the POS. After calls to review the way in which private prosecutions take place, the House of Commons Justice Committee issued a report into private prosecution safeguarding, published in 2020. The report findings bring to light a number of issues. There is contention as to whether or not the PO was in fact undertaking private investigations due to the fact that it is a state-owned corporation (Private Prosecutors Association, 2020). Indeed, there is no clear legal definition as to what constitutes a 'public prosecutor' (House of Commons Justice Committee, 2020). Furthermore, the report acknowledged that private prosecutors are not regulated to the same standards as public prosecutors. This is particularly relevant in relation to disclosure safeguards, as per the legislative measures set out in the CPIA "a person other than a police officer" should "have regard" to the disclosure Code of Practice (s.26, 116) however this is not binding. In order to help alleviate this issue in 2019 The Private Prosecutors' Association (PPA) produced A Code for Private Prosecutors which a number of organisations that conduct private investigations, including the RSPCA, have pledged to follow (House of Commons Justice Committee, 2020).

The case of the RSPCA is of interest in relation to the POS case in terms of how the identified lessons could help inform change to corporation practice. The RSPCA are able to conduct private investigations into allegations of animal abuse under the Animal Welfare Act 2006. In 2016, following a series of concerns into the investigation conduct of the RSPCA, the House of Commons Environment, Food and Rural Affairs Committee published a report recommending that the Government change the status of the RSPCA to a Specialist Reporting Authority. Ultimately the RSPCA were allowed to keep their power to prosecute and since have committed to ensuring transparency into their investigations (House of Commons Justice Committee, 2020). In this manner, the RSPCA publishes annual prosecution reports and has dedicated webpages explaining how the investigation

process is carried out to ensure a fair and independent review of evidence (RSPCA, 2025). Nevertheless, the RSPCA recently received criticism for its decision to prosecute a respected vet (Loeb, 2024). This suggests that the code produced by the PPA does not hold enough power to ensure the safeguarding of private prosecutions. The House of Commons Justice Committee proposed that the Government produce a binding code of standards in order to strengthen regulations of private prosecutions, assuring that they meet the same “standards and expectations of accountability and transparency as public prosecutors” (p.24) perhaps signifying a lesson learnt. Simply put, adequate safeguarding and regulation of private prosecutions could have prevented the harms SPMs were forced to endure.

THE LEGACY OF THE POST OFFICE SCANDAL

The POS has had a profound impact on the legacy of the PO, particularly in relation to the damage of its reputation. In 2022 a Public Inquiry into the POS was requested and has since concluded. Chair Sir Wyn Williams published the first Volume of the Inquiry on the 8th of July 2025, with following findings to be published in a timely manner in order to provide answers to those who have been affected (Post Office Horizon IT Inquiry, 2025a; Post Office Horizon IT Inquiry, 2025b). Moreover, the Inquiry’s Secretariat intends to develop a Legacy Project to help ‘ensure the effects of the Horizon scandal cannot be forgotten’ (Post Office Horizon IT Inquiry, 2023). In 2024, the Post Office (Horizon System) Offences Act was enacted to ensure the swift overturning of wrongful convictions. To their credit the Ministry of Justice (MoJ) has worked quickly to assess and, if necessary, quash convictions. Thus far, 950 cases have been reviewed with 594 found to be Horizon related, amounting to 2141 overturned convictions as some had received multiple convictions (Ministry of Justice, 2025). Unfortunately, the expeditiousness of the MoJ has not been paralleled by the PO in the recompensation of affected SPMs, receiving criticism from MPs who suggest that financial penalties be imposed if the process continues to be delayed (House of Commons Business and Trade Committee, 2025).

The legacy left by the scandal has decimated the legitimacy of the PO. Consequently, those impacted requested that the PO hands over all dealings of conviction claims to the Government, as of 3rd March 2025 the Government announced it would take over responsibility for all conviction proceedings (GOV UK,

2025). With regard to the harms endured by SPMs, the Horizon Convictions Redress Scheme (HCRS) assessment framework acknowledges a range of ontological harms and offers extensive guidelines for addressing and adequately compensating such harms (Department for Business & Trade, 2025). Furthermore, Volume 1 of the Post Office Horizon IT Inquiry (2025a) has recommended that the recompensation scheme be extended to family members severely impacted by the scandal.

The issue of accountability for the POS has yet to be determined. The industry legacy of Fujitsu, in part, remains unclear. Fujitsu has agreed that it will not participate in any future bids for government business and have pledged to contribute to SPM recompensation (Coleman, 2025). The scale of its contribution is expected to be calculated subsequent to the outcome of the inquiry (Coleman, 2025). In 2020 the National Police Chiefs’ Council (NPCC) and the Metropolitan Police Service launched an investigation into the POS and has been working in tandem with the Public Inquiry since 2022 (NPCC, 2024) and are expected to bring prosecutions after thorough investigations. As Rothe & Kauzlarich (2016) highlight, the harmful and immoral practices of corporations erode trust in societal institutions as this conduct becomes the norm. Moreover, they posit that the produced “cover-ups that are sometimes worse than the initial offence” (p.12). This is certainly true in the case of the POS.

The PO has made attempts to rebuild the trust which the scandal destroyed. The PO website claims that since 2019 the corporation reformed culture, practices and operating procedures (Post Office Corporate, 2024). Additionally, attempts to amplify the voices and concerns of current serving SPMs are an ongoing practice within the corporation (Post Office Corporate, 2024). However, Mason (n.d.) is sceptical in the PO’s ability to regain the trust of the public and questions whether or not corporations that prioritise profits over people can ever truly act ethically. Perhaps with effective safeguards and governance in place the parties involved in the POS can prevent further harms from being perpetrated. The POS serves as a cautionary case for future corporate regulation and state accountability. Looking to the future, the exposed oversight and apparent prioritisation of costs over justice may shape the expectation for stronger safeguards and independent regulatory frameworks. If embedded within corporate and institutional structures these practices could support ethical governance and uphold accountability.

CONCLUSION

The POS as a case represents the devastating effect of corporate crime, stemming from corporate malpractice and a lack of accountability.

This article has demonstrated that the neoliberal ideology of the corporations involved and the failure to admit that the Horizon project was unsuccessful led to nearly 20 years of wrongful convictions and the suffering of ontological harms. The initial failings of the corporations involved did not amount to 'crime' in the traditional sense. Using Zemiology as a conceptual framework, this review has challenged this notion by demonstrating that immoral acts cause extensive harm that can often be prevented. The corporate goals of prioritising profits established the corporate culture that allowed the POS to continue. A lesson was identified by Christie's (2022) position that effective corporate governance is imperative to preventing harms. Perhaps the most shocking failure of the POS were the investigations that were carried out against SMPs. A further important lesson identified in this case is that it is crucial to ensure greater safeguards for private prosecutions. There has been a multiagency response in order to repair the harms caused by the POS as demonstrated in this account. The PO had expressed its desire to remain as 'one of the most admired institutions in the public sector' (Post Office Corporate, 2024) however, it remains unknown as to whether the PO will be able to rebuild public trust.

REFERENCES

- Animal Welfare Act 2006*, s51. Available at: <https://www.legislation.gov.uk/ukpga/2006/45/section/51> (Accessed on 30 March 2025)
- Broadbent, Jane and Laughlin, Richard. (2005) 'The Role of PFI in the UK Government's Modernisation Agenda', *Financial accountability & management*, 21(1), pp. 75–97. <https://doi.org/10.1111/j.0267-4424.2005.00210.x>
- 'Bates v Post Office Ltd' (2019) England and Wales High Court, *Judiciary UK*. Available at: <https://www.judiciary.uk/wp-content/uploads/2019/12/bates-v-post-office-judgment.pdf> (Accessed 29 March 2025)
- Child, John and Rogers, Johnathon. (2024), Why the Post Office was able to bring private prosecutions in the Horizon IT scandal, *The Conversation*. Available at: <https://theconversation.com/why-the-post-office-was-able-to-bring-private-prosecutions-in-the-horizon-it-scandal-220959> (Accessed on: 28 March 2025)
- Christie, James. (2022) 'The Post Office IT scandal –why IT audit is essential for effective corporate governance', *Digital Evidence and Electronic Signature Law Review*, 19, pp. 42–86. <https://doi.org/10.14296/deeslr.v19i0.5425>
- Coleman, Charley. (2025). *Post Office Horizon IT scandal: Progress of compensation*. House of Lords Library. Available at: <https://lordslibrary.parliament.uk/post-office-horizon-it-scandal-progress-of-compensation/#fn-45> (Accessed on: 30 March 2025)
- CPS (2024) *Private Prosecutions*. Available at: <https://www.cps.gov.uk/legal-guidance/private-prosecutions> (Accessed 27 March 2025).
- CPS (2018) *The Code for Crown Prosecutors*. Available at: <https://www.cps.gov.uk/publication/code-crown-prosecutors> (Accessed on 29 March 2025).
- Criminal Procedure and Investigations Act 1996*, s.3. Available at: <https://www.legislation.gov.uk/ukpga/1996/25/section/3> (Accessed 28 March 2025).
- Criminal Procedure and Investigations Act 1996*, s.26. Available at: <https://www.legislation.gov.uk/ukpga/1996/25/section/26> <https://www.legislation.gov.uk/ukpga/1996/25/section/3> (Accessed 28 March 2025).
- Darlington, Sian. (2024) Understanding the role of the law in the Post Office scandal part 2: the role of a prosecutor, *gunnercooke*. Available at: <http://gunnercooke.com/understanding-the-role-of-the-law-in-the-post-office-scandal-part-2-the-role-of-a-prosecutor/> (Accessed on 30 March 2025)
- Department for Business and Trade (2025). *Horizon Convictions Redress Scheme (HCRS): assessment framework*. Available at: <https://www.gov.uk/government/publications/horizon-convictions-redress-scheme-hcrs-assessment-framework/horizon-convictions-redress-scheme-hcrs-assessment-framework> (Accessed on 30 March 2025).
- GOV UK (2025). *Government to take over redress for convicted postmasters from Post Office*. Available at: <https://www.gov.uk/government/news/government-to-take-over-redress-for-convicted-postmasters-from-post-office> (Accessed on 30 March 2025).
- Growns, Bethany, Kukucka, Jeff, Moorhead, Richard, and Helm K. Rebecca. (2024) 'The Post Office Scandal in the United Kingdom: Mental health and social experiences of wrongly convicted and wrongly accused individuals', *Legal and criminological psychology*, 29 (1), pp.17–31. <https://doi.org/10.1111/lcrp.12247>
- House of Commons Business and Trade Committee (2025), *Post Office and Horizon scandal redress: Unfinished business*. Available at: <https://committees.parliament.uk/publications/46112/documents/230204/default/> (Accessed on: 30 March 2025).
- House of Commons Environment, Food and Rural Affairs Committee (2016), *Animal welfare in England: domestic pets*. Available at: <https://publications.parliament.uk/pa/cm201617/cmselect/cmenvfru/117/117.pdf> (Accessed on 30 March 2025)
- House of Commons Justice Committee (2020), *Private prosecutions: safeguards*. Available at: <https://committees.parliament.uk/publications/2823/documents/s/27637/default/> (Accessed on: 28 March 2025)
- Loeb, Josh. (2024), 'RSPCA Criticised over Prosecution Decision', *Veterinary Record*, 195 (12), pp. 477–477. <https://doi.org/10.1002/vetr.5018>
- Mason, Dave. (n.d.) The Post Office Horizon Scandal: Has Trust Already Crumbled?, *Mentor Training*. Available at: <https://mentormediatraining.co.uk/news/post-office-scandal/> (Accessed on 30 March 2025)
- Ministry of Justice (2025), *Quashed convictions management information: 13 March 2025*. Available at: <https://www.gov.uk/government/publications/post-office-horizon-system-offences-act-2024-quashed-convictions-management-information/quashed-convictions-management-information-13-march-2025> (Accessed on 30 March 2025).
- NPCC (2024). "Our ongoing goal is the pursuit of justice.". Available at: <https://news.npcc.police.uk/releases/our-ongoing-goal-is-the-pursuit-of-justice> (Accessed on 31 March 2025)
- Pemberton, Simon. (2015) *Harmful societies: understanding social harm*. Bristol, England ; Policy Press. <https://doi.org/10.46692/9781847427960>

- Pearce, Frank. (2009), 'Crime and Capital business Organisations', in Whyte, David. *Crimes of the powerful: a reader*. Maidenhead: McGraw-Hill Open University Press.
- Post Office Horizon IT Inquiry (2023) *Sub-postmasters, family members and others invited to attend Inquiry engagement session*, Available at: <https://www.postofficehorizoninquiry.org.uk/news/sub-postmasters-family-members-and-others-invited-attend-inquiry-engagement-session> (Accessed on: 30 March 2025)
- Post Office Horizon IT Inquiry (2025a), *Volume 1 of the Post Office Horizon IT Inquiry's final report*, Available at: <https://www.postofficehorizoninquiry.org.uk/volume-1-post-office-horizon-it-inquiry-final-report> (Accessed on: 13 July 2025)
- Post Office Horizon IT Inquiry (2025b) *What's next for the Inquiry?* Available at: <https://www.postofficehorizoninquiry.org.uk/> (Accessed on: 30 March 2025)
- Post Office (Horizon System) Offences Act 2024*, Available at: <https://www.legislation.gov.uk/ukpga/2024/14> (Accessed on: 30 March 2025)
- Prosecution of Offences Act 1985*. Available at: <https://www.legislation.gov.uk/ukpga/1985/23/1991-02-01> (Accessed: 28 March 2025)
- Rothe, Dawn and Kauzlarich, David. (2016) *Crimes of the powerful: an introduction*. London: Routledge. <https://doi.org/10.4324/9781315756776>
- RSPCA (2025) '*Prosecuting animal cruelty and neglect*'. Available at: <https://www.rspca.org.uk/whatwedo/endcruelty/prosecution> (Accessed on 30 March 2025)
- Tombs, Steve (2018), 'For Pragmatism and Politics: Crime, Social Harm and Zemiology', in Boukli, A and Kotzé, J. *Zemiology: Reconnecting Crime and Social Harm*. Palgrave Macmillan, pp.11-31. https://doi.org/10.1007/978-3-319-76312-5_2
- The Bar Council (2024) *Bar Council calls for review of private prosecution powers*. Available at: <https://www.barcouncil.org.uk/resource/bar-council-calls-for-review-of-private-prosecution-powers-press-release.html> (Accessed 26 March 2025)
- The Royal Commission on Criminal Procedure (1981), Available at: https://www.ucpi.org.uk/wp-content/uploads/2022/09/royal_commission_on_criminal_procedure-report.pdf (Accessed on: 29 March 2025)
- Wallis, Nick (2022) *The Great Post Office Scandal*, Bath: Publishing Ltd.

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