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Police perceptions of problem-oriented policing and evidence-based policing: evidence from England and Wales

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ABSTRACT

The history of policing is littered with reform programmes, which aim to improve effectiveness, efficiency and legitimacy. Problem-oriented policing (POP) and evidence-based policing (EBP) are two popular and enduring reform efforts, both of which have generated significant researcher and practitioner attention. There are important similarities between POP and EBP: both approaches provide a framework intended to improve the outcomes of policing. There are also key differences, however, in terms of their main objectives, standards of evidence and units of analysis. Despite both approaches being widely advocated and implemented, presently little is known about police practitioner understanding of the relationship between POP and EBP, both in principle and in practice. To address this gap, this paper draws on survey ($n = 4,141$) and interview ($n = 86$) data collected from 19 police forces in England and Wales in 2019 to explore police practitioners' views on the relationship between POP and EBP, and the extent to which these two approaches inform contemporary police practices. Our findings indicate that respondents generally viewed the two approaches as complementary and important frameworks for orienting police work. However, respondents also drew attention to how the two approaches are not always connected organisationally nor in the minds of police personnel. In addition, challenges were identified in the application of both approaches in practice. Our results suggest that more needs to be done to maximise the potential of POP and EBP, both separately and synergistically. The article concludes by suggesting some ways in which this might be achieved.

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Introduction

Policing is no stranger to reform. The past fifty years have borne witness to successive police innovations, most of which centre on efforts to overcome challenges to or concerns about police effectiveness and fairness. Examples of police innovations include broken-windows policing, community policing, hot spots policing, intelligence-led policing, pulling-levers policing, reassurance policing and third-party policing (see Weisburd and Braga, 2019). More recent examples of policing innovations that have garnered attention in the UK include trauma-informed policing (e.g. Bateson, McManus and Johnson, 2020) and public health approaches to policing.¹

Policing innovations of the sort described above have surely led to improvements in how the police go about their business. Moreover, as Scott, (2000) argues, the many types of proposed reform efforts have 'on the whole, been beneficial insofar as it acknowledges that the policing function and

its methods are complex and that there are important policy choices to be made as to how policing will be organised and carried out' (p. 27). However, it is also true that the rhetoric of police reform does not always match the reality. History shows that generating significant and enduring change in police policies and practices is highly challenging. Resistance is common. Skogan (2008) puts it best, 'police reform is risky and hard, and efforts to innovate in policing often fall short of expectations' (p. 23).

Problem-oriented policing (POP) and evidence-based policing (EBP) are two kinds of police innovation, the former originating in 1979 and the latter in 1998. Both enjoy widespread popularity, and have been the subject of significant researcher, practitioner and policymaker attention. As Scott, (2000) observes, POP and EBP are also distinct from many other forms of police innovation in the sense that they are neither criminological theories nor are they specific police tactics. Rather, both POP and EBP set out broad frameworks for how the police should operate in the interests of improving police effectiveness, efficiency and fairness.

In England and Wales, both POP and EBP are widely advocated. Both approaches feature prominently on the training curriculum for police office and in important strategic documents about the future of policing. Many police forces have invested in efforts to embed and spread POP and EBP. Presently, however, little is known about police practitioner understanding of the relationship between POP and EBP, both in principle and in practice. This article aims to fill this research gap, drawing on a large sample of primary data collected in 2019 through an online anonymous survey ($n = 4,141$) and semi-structured interviews ($n = 86$) with police officers and staff from 19 police forces in England and Wales. Doing so is considered important for several reasons. First, knowledge about how POP and EBP are generally conceived by practitioners may help refine strategies to implement and deliver these two approaches. Relatedly, a lack of clarity around the relationship between POP and EBP may generate resource wastage and ultimately restrict their operational effectiveness. Moreover, better understand practitioner views on the conceptual boundaries between POP and EBP may yield useful insights on the nature of innovation and reform within policing more generally.

The remainder of this article is organised as follows. We begin by briefly mapping the development of POP and EBP as distinct reform movements in policing, reflecting on the relationship between them and discussing the implementation of the two approaches in practice. This is followed by a description of the data and methods used in this study. Next, we report our findings on how police personnel make sense of POP and EBP, understand the relationship between them (noting points of convergence and divergence), and how these approaches do or do not inform current police practices. We finish by considering a way ahead; proposing ways in which POP and EBP might better operate synergistically in the interests of improving police effectiveness and fairness.

POP and EBP as reform movements in policing

POP is the brainchild of Herman Goldstein. It is a framework for improving the way that policing operates in a free society (Goldstein, 1979, 1990, 2018). The basic premise of POP is that the core mission of policing should be to understand and prevent *problems* – taken by Goldstein to mean recurrent clusters of related incidents that affect the community, and which fall within the police remit – rather than to react to individual incidents as they occur (Goldstein, 1979, 1990). POP stresses the importance of systematically identifying and analyzing problems and developing and assessing the impact of tailored responses to them (Goldstein, 1979, 1990). POP is commonly associated with the 'SARA' model (Scanning, Analysis, Response, Assessment; Eck & Spelman, 1987), which is used widely as a means to translate Goldstein's ideas into practice (Sidebottom and Tilley, 2011). An extensive body of case studies, experiments and systematic reviews demonstrates the effectiveness of POP in tackling a wide range of crime and public safety problems (Clarke & Scott, 2020; Weisburd et al., 2008, 2010).

EBP was first proposed by Lawrence Sherman more than 20 years later (Sherman, 1998). EBP takes its inspiration from evidence-based medicine and forms part of a broader trend towards better integrating policy and practice with high quality research evidence (e.g. David et al., 2000). As Sherman puts it, EBP ‘uses the best evidence to shape the best practice. It is a systematic effort to parse out and codify unsystematic “experience” as the basis for police work, refining it by ongoing systematic testing of hypotheses’ (Sherman, 1998, p. 4). The emphasis of EBP is on creating, assembling, disseminating and applying robust research evidence to improve police effectiveness, efficiency and legitimacy (Sherman, 1998, 2013). Cordner (2020) shows this approach can be used across a vast range of external and internal police issues. When used to tackle crime, like POP, EBP stresses the importance of analysis to understand trends and patterns of harm, and to evaluate the impact of chosen responses (Sherman, 1998, 2013). This process has been referred to as ‘targeting, testing and tracking’. As Sherman explains:

‘(E)vidence-based *targeting* requires systematic ranking and comparison of levels of harm associated with various places, times, people, and situations that policing can lawfully address. Evidence-based *testing* helps assure that police neither increase crime nor waste money. *Tracking* whether police are doing what police leaders decide should be done’ (Sherman, 2013, p. 377 our emphasis).

There are many affinities between POP and EBP. They share a common central feature: both approaches advocate for ‘an ideology that incorporates science and research in the practice of policing in democratic societies’ (Lum et al., 2012, p. 64). Both are organizational theories about how the police respond to the demands placed on them (Scott, 2017). Both approaches seek to bring rigorous methods to bear in the conduct of policing: through identifying police-relevant problems and weighing their relative claims to police attention (that is scanning in the language of POP and tracking in EBP); identifying promising interventions that might effectively address problems focused on (that is response in the language of POP and targeting in EBP); and rigorous evaluation of outcomes (that is assessment in the language of POP and testing in EBP). Moreover, both POP and EBP aim to put policing on a research-informed footing.

Given the noted affinities between POP and EBP, it is perhaps unsurprising that both approaches have also proven challenging to deliver (see for example, Lum et al., 2012; Lum & Koper, 2013; Lum and Telep, 2014; LW. Sherman, 2015; Read & Tilley, 2000; Bullock et al., 2006; Scott, 2017). Neither has passed a tipping point where it forms the conventional police way of working (Goldstein, 2018; LW. Sherman, 2015). In relation to POP, serial weaknesses in the delivery include weak or non-existent problem analysis, a tendency to implement enforcement-based interventions, and little or poor evaluation. Organisational commitment to POP has also been fleeting and episodic (Bullock et al., 2006; Read & Tilley, 2000). Likewise, for EBP, studies have shown that police personnel often have limited awareness of available research evidence, may not see the value of research to operational policing, and can be resistant to the idea of drawing on research in the interests of police improvement (Lum and Telep, 2014).

Some view POP as a form of EBP, with POP having the narrower focus of addressing police relevant problems and EBP having the broader remit of better integrating research evidence into police policy and practice. Indeed, in their recent book on EBP, Huey et al. (2021, p. 32) consider POP and EBP to be ‘two sides of the same coin’. However, as Scott (2000) observes, whilst there clearly are many points of synergy between POP and EBP, it is also the case that the two approaches are distinctive reform movements, with points of difference both conceptually and in their practical application.

First, the two approaches were articulated discretely and there are certain differences in the approaches of their chief architects: Goldstein and Sherman. There are, for example, differences in the weight placed on the types of research which should be conducted in either choosing strategies for responding to problems or in evaluating the results of those strategies. EBP does not advocate specific types of research that should be conducted, rather that the best available evidence (in combination with experience) be used to guide policy and practice over anecdote, opinion or political expediency

(Sherman, 1998; Lum & Koper, 2013; Scott, 2017). However, to date the EBP literature has tended to place greater weight on making use of evidence derived from experimental and quasi-experimental methods (and especially randomised control trials), conducting systematic reviews, and on the principles of quality control, drawing on the model practiced in medicine (Sherman, 1998). In POP, there is no clear statement about standards of evidence either in selecting strategies for responding to problems or in monitoring the implementation and results of those strategies, nor are controlled tests much utilised in practice within POP (Sherman, 1998; Scott, 2017). Equally, EBP is interested in the generalizability of its research findings, whilst POP is less so since the core purpose of POP is addressing local problems in ways that are contextually and situationally dependent (Scott, 2017). There is, as a consequence, the potential for the language, and the practice, of the two approaches to be understood differently by police practitioners.

Second, the two approaches were developed and implemented over different periods of time. There was a long history of attempts to deliver POP before police organisations started to absorb EBP as an explicitly articulated reform movement within police work. Since Goldstein's original formulation of POP, many police organisations around the world have experimented with the approach (see for example, Leigh et al., 1996; Scott, 2000). In practice this meant that many UK police forces introduced centrally located problem solving teams/units to embed the approach. However, the advent of EBP meant many of these units were either withdrawn and replaced by new structures, or that these new EBP units were introduced in parallel to existing problem-solving structures.

Third, national and international structures to support POP and EBP have also developed separately. For example, the *Center for Problem-Oriented Policing*,² devised and operated by Mike Scott, serves as an institutional home for POP (Scott, 2017). From the Centre, the concept of POP is promoted, and its practice disseminated, notably through problem-solving guides (Scott, 2017). There are annual awards and conferences in POP, such as the International Herman Goldstein Award for Excellence in Problem-Oriented Policing which was launched in 1993 and in the UK, The Tilley Award, which ran continuously from 1999 to 2012 and was re-established in 2018. Through conferences, guidebooks, case studies, and other publications and educational tools, a large, rich, and comprehensive body of information – organized and crafted to comport with the police perspective on their work – is available worldwide to help police organisations improve the effectiveness and fairness of their responses to local policing problems (Scott, 2017). For EBP, there is the 'Cambridge Journal of Evidence-Based Policing',³ the Crime and Justice Group of the Campbell Collaboration,⁴ and a number of Societies of Evidence-based Policing (in the US, UK and Australia and New Zealand) which act as conduits for and advocacy of EBP. However, these bodies of practice are not organised in tandem, though there is much in common between the approaches of the organisers of both, and, again, this might lead to a tendency to see the two approaches as distinct amongst police personnel within implications of practice. Consequently, there is a need to understand how EPB is positioned organisationally against other reform movements in policing.

In sum, we contend that despite the obvious links and similarities between POP and EBP, their different histories, trajectories and affiliations may mean that there is the potential for the two approaches to be considered differently, as competitors rather than as compatible and complementary approaches to policing. Presently, little research has explored this potential. This study seeks to fill this gap.

Data and methods

The findings reported are derived from a larger study on the extent, nature and patterns of problem-oriented policing in England and Wales in 2019 [reference to be added following de-anonymisation]. In particular, we draw on two data sources collected as part of that larger study: an anonymous online survey and semi-structured interviews. Here we discuss each source of data in turn.

Survey

A cross-sectional online anonymous survey was implemented in nineteen police services in England and Wales. The sampling frame for the survey was the forty-three territorial police forces of England and Wales and the sample was based on two distinct groups of police services. One group comprised eight police forces which had been purposefully selected by the authors to ensure adequate representation of forces with different histories of POP (i.e. some with a longstanding commitment to POP and some with little prior involvement) as well as variation in the nature and size of police force areas in England and Wales (i.e. urban/rural and metropolitan/non-metropolitan forces). The second group comprised eleven further police forces, selected randomly, in order to produce findings representative of policing in England and Wales more generally. A formal letter was sent electronically to each police force inviting them to take part in this study. All agreed. The full survey consisted of forty-four questions organised into eight sections (see – add link after anonymisation).

In the survey, participants were shown a series of statements and asked to indicate if they tended to agree or disagree with each one. The statements were presented in random order. Each statement was presented in two versions (one the opposite of the other) with each participant presented with one at random. Answers to the ‘negative’ versions of each statement (i.e. those in the form of ‘I do *not* agree that . . .’) were then reversed for analysis. Statements of relevance to this study include whether participants considered problem solving to be an important aspect of evidence-based policing. Participants were also (randomly) shown a list of resources, both internal and external to police organisations, and asked how frequently they used these resources when trying to understand and respond to crime problems. Listed resources included information from crime reports, intelligence reports, information from partner agencies as well as external research repositories such as the College of Policing Crime Reduction Toolkit and the Campbell Collaboration systematic review libraries. Participants were also (randomly) presented with a list of asked to potential partners, both internal and external to police organisations, and again asked to indicate how frequently they work with stated partners when trying to deal with crime and disorder problems. Listed partners include analysts, the community and researchers. In relation to external partners in particular, respondents were also asked the free-text question: *‘Thinking only about non-police agencies (such as charities, universities and the community), what are the main reasons why you rarely or never discuss problems or response options with them?’*

The survey population was all police officers and staff in the participating nineteen police forces. In each force except one, an invitation to take part in the online survey was either emailed to all officers and staff by a senior officer or distributed via an existing intranet news website or email newsletter. In the final force, the invitation was sent to unit commanders who decided whether to distribute it to officers and staff within their units.

All survey data were included in the analysis, with no data excluded. Analysis was performed using R version 3.6.1. Since all the survey questions were optional, the number of respondents answering each question varied (see Appendix). For each survey question, a regression model was used to identify whether respondents’ answers varied according to their personal characteristics. These models took into account the respondent’s gender, whether they had ten or more years of service, whether or not they had a degree or higher qualification, whether they were a police constable, police officer of higher rank or a member of police staff, and whether they were in a response policing, neighbourhood policing or other roles. Where differences between groups are mentioned, these differences are statistically significant (at the $P < 0.05$ level) after controlling for the other characteristics described above. A separate logistic regression model was run for each opinion-based question. P-values were corrected for multiple comparisons using Holm’s method (see Annex 1).

A total of 4,141 respondents accessed the survey, with 2,621 (63%) continuing to the final questions. The 4,141 respondents in this survey represent 2.6% of the full-time equivalent regular police officers and 1.5% of police staff/volunteers in the forces involved in the survey⁵. This rate is skewed downwards by two factors. First, around 920 respondents did not state which force they work for. Second, the response rate among one of the larger police forces taking part in this study was comparatively low, but given their large size they accounted for a sizable proportion of all survey invitations sent out as part of this research.

Assessment of the proportion of respondents answering each question revealed no discernible patterns or explanations for the attrition in survey responses. Of those respondents who gave their role/ rank, 72% were police officers, including 47% of all respondents who were regular police constables or detective constables. Compared to the police workforce of the surveyed forces, respondents were more likely to be supervisory police officers (i.e. of sergeant rank or above) than police constables, community support officers or police staff. Among respondents who specified their role, 358 said they worked in a neighbourhood role, 453 in response policing and 1,688 in other roles. No respondent self-identifying as a Chief Officer completed the survey. Beyond rank or grade, 73% of survey respondents reported having more than 10 years' experience, with only 7% having less than two years' service and only 21% being aged under 35. Of those respondents giving an answer, 41% (42% of officers and 37% of staff/volunteers) reported having a bachelor's degree or higher qualification, while 8% reported currently studying for a qualification. Of the respondents who stated their gender, 60% (66% of officers and 45% of staff/volunteers) were male. Thirty-two respondents had entered policing through the Police Now scheme,⁶ 21 via inspector or superintendent direct entry and 47 via a current or previous fast-track or graduate-entry scheme. The 4,141 respondents in this survey represent 2.6% of the full-time equivalent regular police officers and 1.5% of police staff/volunteers in the forces involved in the survey.

Semi-structured interviews

The second type of data used here comes from semi-structured interviews conducted in the purposefully selected eight police forces. In each of these forces, the nominated point of contact was asked to provide the authors with a list of between ten and fifteen individuals in their organisation who were involved in or knowledgeable about POP, and had the competency to provide an informed view on the subject. No restrictions were placed on the rank or role of identified individuals. In this sense, interview participants can be considered 'key informants' rather than a general sample of police personnel (see USAID, 1996).

Nominated individuals were invited to take part in interview via an email from the research team. Across the eight police forces purposefully selected to partake in interviews, we received the names of 118 candidate interviewees. All were contacted and 86 (72%) consented to be interviewed. Following informed consent, interviews were conducted on the phone or face to face, recorded and transcribed. Pertinent to this paper, interviews explored the participants' views on the relationship between POP and other prominent policing approaches including EBP. An iterative thematic approach was used to identify the major themes in the interview data (Braun & Clarke, 2006). This was a staged-process of reading and re-reading all interview transcripts and noting down initial ideas on emerging themes; generating initial codes based on the preliminary set of themes; searching for broader themes by collating codes into higher-order topics, and gathering all data relevant to each potential theme; reviewing themes and mapping them across the data sets; ongoing refinement of themes into an overarching narrative or story; and selecting examples and quotations that illustrated the final themes. This study has been given favourable ethical approval by the UCL Research Ethics Committee: [Project ID number: 2559/002].

Results

Perceptions of POP and EBP in principle

Even though forces in this survey had separated EBP and POP in their structures, overall, study participants converged on the view that POP and EBP are connected and compatible approaches to policing. Survey participants overwhelmingly agreed that POP was important for EBP (91%, $n = 3,561$). Interview participants also strongly endorsed this view, as illustrated in the quote below:

I totally think they [POP and EBP] are strong bedfellows. I think for me, my perception is, the basic precept is the same. I see no conflict whatsoever. I think good evidence-based policing will adopt problem-orientated policing principles and vice versa. I see them as natural bedfellows. Actually, for me, I would have little worry whatever label we termed, for me they both mean pretty much the same thing. [F20: Respondent: 1038]

As the above interview extract illustrates, EBP and POP were generally deemed to have similar underlying concerns. As one participant put it: ‘Combining understanding what the problem is, looking and scanning the environment for solutions for it, working in partnership, testing small and if it works doing it on a grander scale. For me it’s very much side by side’ [F20: Respondent: 1038]. Indeed, the processes underpinning the two approaches were often described as mapping on to one another. As one interview participant explained:

I don’t think they should be seen as two different things. I think you can map across EBP into SARA and before anything actually gets put in place the response should be based on what works and an understanding of what’s already been done to try and address an issue like the one we’re going to address and then clearly in terms of assessment or evaluation, again it’s got to be done with the right methodology. If you’re going to say, targeting, testing and tracking, you know, can be mapped straight across can’t it, to SARA. [F14: Respondent: 1068]

The above extract suggests that POP and EBP were perceived to have the potential to provide a strong methodology for orienting police work. However, interviewees also demonstrated that the two approaches are not always connected organisationally nor in the minds of police personnel. Several interview participants drew attention to ways in which organisationally ‘there has been a bit of a disconnect between EBP and problem solving [POP] which probably more fundamentally needs to be fixed’ [F13: Respondent: 1056]. In addition, the approaches were sometimes perceived differently by police personnel. Participants noted that EBP was sometimes characterised as inaccessible and ‘academic’. POP, in contrast, was characterised as less demanding, more practical, and somewhat more accessible to officers as a result. As one participant told us:

I think the difficulties with the evidence-base [is] it can be quite exclusionary [...] the brilliant thing about POP is anybody in the organisation can pick it up and use it and come up with some fantastic work. Stuff about the evidence-base [...] it becomes a little bit more highbrow and a bit more difficult for the average practitioner to implement. [F18: Respondent: 1027]

Perceptions of POP and EBP in practice

We now consider how POP and EBP are delivered in practice, based on the views of the study sample and focussing mainly on how the two approaches are seen to converge through, for example, the use of research-based evidence, assembling the knowledge base about effective responses to problems and the evaluation of police relevant interventions and actions.

Drawing on research evidence on what is effective in responding to crime problems might be an obvious point of convergence between EBP and POP. However, there was little evidence to suggest that this was routinely happening among the sample surveyed here. As [Figure 1](#) demonstrates, according to survey respondents, few sources of research-based information and evidence were drawn upon to orient problem-oriented work (see, also Lum et al., 2012). Fewer than 10%

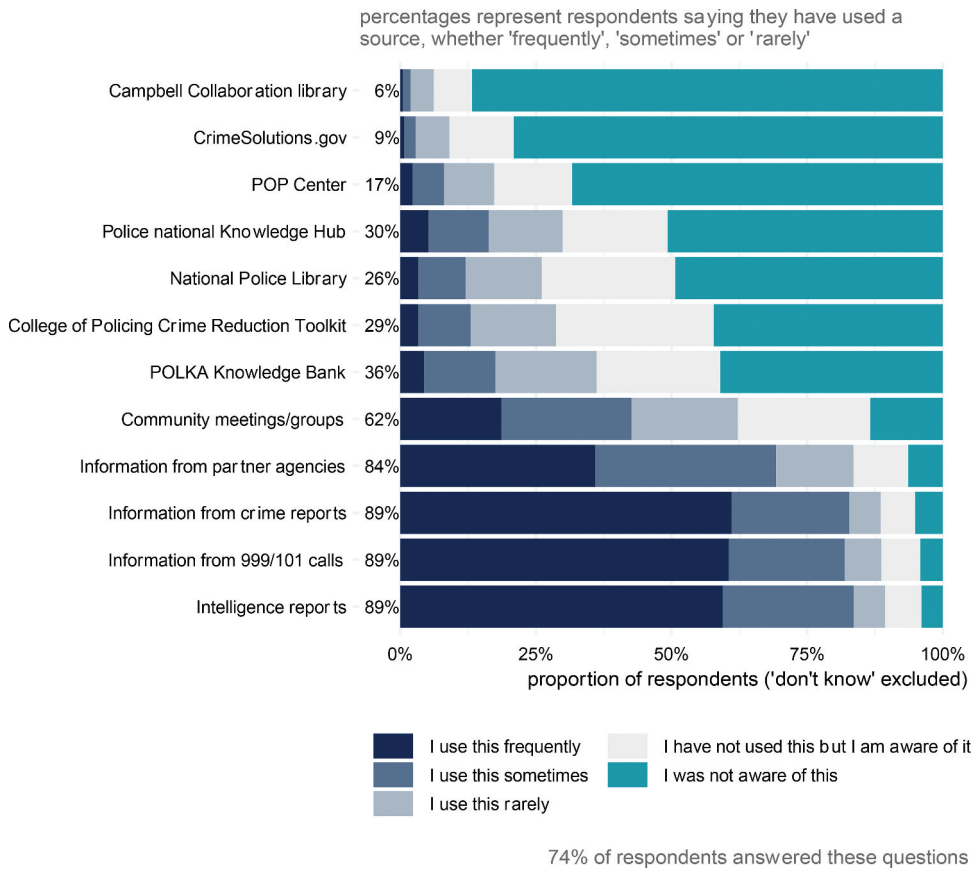


Figure 1. Self-reported sources of research-based information and evidence drawn on when problem-solving (n = 3,064).

of survey participants stated that they made frequent use of the College of Policing Crime Reduction Toolkit, National Police Library or Knowledge Hub, although most survey participants did state that they had heard of these sources.⁷ Most participants had not heard of the remaining three sources (POPCenter.org, CrimeSolutions.gov and the Campbell Collaboration library of systematic reviews). Usage of the College of Policing Crime Reduction Toolkit, POLKA Knowledge Bank, POPCenter.org and the Knowledge Hub was significantly higher among supervisory officers and those working in neighbourhood roles. However, for almost all research-based sources fewer than a quarter of participants even in those categories frequently or sometimes made use of them.

Figure 1 shows that knowledge bases intended to inform police practices are not being routinely used, at least among the self-selected sample participating in this study. Possible reasons for this emerged from our interviews. For example, several participants suggested that academic knowledge is sometimes viewed as too abstract and disconnected from the day-to-day needs of police officers. Accordingly, the importance of transferring academic knowledge into actionable knowledge was regularly discussed in interviews. As one participant put it: '(i)t's transferring your knowledge as an academic into what we can as police officers physically do [...] It's putting it in a real-life scenario' [F20: Respondent: 1042] and 'explaining that there are some real good studies out there with evidence-based around them in relation to things that officers might be dealing with' [F12: Respondent: 1048].

Participants also argued that many police organisations were neither geared up to best absorb the knowledge base that does exist nor to use it to orient practice. Interview participants drew attention to how experiential rather than academic learning has been stressed within police work. As one put

it: ‘What you’ll find, talking to practical police officers who’ve probably got 20 years’ experience, if I start [talking about] academic theories, it’ll turn them off. They want to know how to solve a problem and the practical ways, how to deal with issues, and that’s it basically’ [F17: Respondent: 1011]. The suggestion being made was that more needs to be done – ideally in partnership between those researchers and academics who produce the research and police organisations – to make clear to officers and staff the implications of and practical value in the academic evidence base.

Building relationships between police organisations and researchers and academia is a point of synergy between EBP and POP (Goldstein, 2003; Sherman, 1998). However, there was limited evidence of this occurring among our sample. Only 2% of survey respondents said they often discussed problems with researchers from universities or other research organisations, with 73% saying they had never done so. Those who stated that they had recently been involved in problem-oriented work but never or rarely discussed problems with researchers were asked to give reasons for this in their own words. Several themes were present. First, survey participants drew attention to a perceived lack of time to do so. This reportedly being the result of the day-to-day demands of police work (many participants described the ‘firefighting’ or ‘sticking-plaster’ nature of their role as a barrier to consulting researchers). Second, there was a perception amongst both survey and interview participants that the ‘sedate’ timetables of producing academic research did not align with the expectations of police personnel for faster responses. For one interview participant:

(B)ecause of the nature of our kind of work, we’re very reactive and we want results straightaway. So we go to universities, we ask them to do a bit of academic work around perpetrators and domestic abuse and whatever project that we might pick – drugs, harm, high harm, volume offences – and we are not patient enough, sometimes, with universities because we’re expecting that straightaway (snaps fingers) [F14: Respondent: 1063].

Third, participants described not knowing how researchers could help (or believing that they could not help) contribute to resolving crime and disorder problems, not knowing how to contact relevant researchers, or finding it difficult to contact researchers (especially for participants working shifts). Indeed, some survey respondents mentioned never having even thought that researchers could help the police until being asked this question. Fourth, some participants thought that any assistance that could be provided by researchers was not relevant to their work or (sometimes based on previous bad experience) that researchers would provide poor advice. As one survey respondent simply put it ‘they do not understand policing’. Fifth, survey participants described feeling that information on policing problems could not be shared with researchers for reasons of data protection or operational security. Lastly, participants drew attention to a feeling that liaising with external researchers was not part of their own role within the wider structure of policing.

Despite the above-mentioned reasons for *not* forming police-researcher collaborations, there were examples within the accounts of those interviewed of emerging and in some cases long-standing relationships between the police and external researchers. Interview participants drew attention to how there has been a growth of research and teaching collaborations between the police and universities. As one interview participant stated: ‘So, within ten years, you’ve gone from really having no research base with academic institutions, to it being a fully embedded model where you’ve got a number of different collaborations’ [F14: Respondent: 1068]. Partnerships between police organisations and universities were certainly viewed as potentially valuable by interview participants and they were evident in some of the participating forces. Even so, on the basis of the evidence collected in this study, these kinds of police/university partnerships are best described as sporadic and associated with committed (often senior) individuals rather than diffused throughout police organisation. For one interview participant: ‘it’s an area we’re aware of and we do little bits but it’s an area where we could do much more and perform better, working with them than we currently do’ [F20: Respondent: 1036] and ‘I think things like the evidence-based opportunities with local universities is something that we expect forces to do, but we don’t necessarily give them the tools to do it. So, I’ve certainly seen one or two really key people who are hugely committed to that link between police forces and universities.’ [F14: Respondent: 1063]

A commitment to building the knowledge base about effective responses to problems is a further point of convergence between POP and EBP. That not enough was known about the wide array of problems that officers are called to deal with was frequently discussed (see also Scott, 2017). As one interview participant stated:

stuff that we really could do with being researched there's a total absence of. So, for instance, how effective is targeting and what sort of targeting works? You know, we're not very good on that. The police love targeting teams and we've thrown millions of pounds of resource into targeting teams but there's very little evidence of what sort of targeting works better [F14: Respondent: 1065]

The need to analyse crime problems and evaluate the impact of responses is also a point of synergy between EBP and POP. Reflecting the findings of many other studies (Clarke, 1997; Bullock et al., 2006; Cordner & Biebel, 2005; Scott, 2000) weaknesses in analytical capacity of police services were acknowledged by interview participants. A central theme was that they neither had access to nor experience of working with an analyst. As one interview participant explained: 'I've definitely heard of the mysterious analysts. I haven't come across them, and I haven't used them yet' [F17: Respondent 1018]. Clearly, a general lack of analytical capacity will negatively affect what might be achieved both in terms of EBP and POP. Similar points were made about evaluation. As we have seen, whilst both approaches conceive research broadly, EBP is associated with experimentation in ways that POP is not. Reflecting this, there was a perception that EBP requires greater scientific rigour in comparison to POP, with implications for both. As one interview participant stated:

'I think evidence-based policing gets [criticised] because it's too academic and then problem solving gets [criticised] because it lacks some of the rigor around some of the areas where it needs to have rigor in terms of particularly around problem definition of the degree of analysis you might then want to put in to understanding that and then the evaluation' [F14: Respondent: 1062].

Either way, weaknesses in evaluation capacity in participating police services were often mentioned. As one interviewee put it in respect to POP: 'We've got loads of really good examples of where we are POP. Our icing on the cake that I call it is we need to start measuring what's working and what's not, that's the next stages for us' [F12: Respondent: 1044]. We were told that evaluations were often conducted in a rather cursory manner (such as through informal discussions or observations). For example, 'I would say it's just actually speaking with people around the area to say is, has it helped, has it worked' [F16: Respondent: 1005]. This situation reflecting a lack of capacity: 'I think analytically there's a dearth of skills in rigorous science particular around evaluation [...] we haven't got the skills around evaluation in the assessment side of it and I would agree, nationally there's a dearth in that kind of experience and knowledge, in a number of organisations as well' [F14: Respondent: 1070].

Discussion

POP and EBP are important police reform movements. The ideas underpinning both approaches have taken hold in many countries and have generated significant researcher and practitioner attention. They continue to be widely advocated and implemented. There are important similarities between POP and EBP. At root, both provide frameworks for how the police do their business in the interests of improving police effectiveness and fairness. Both seek to foster a more evidence-informed police way of working. There are also important differences between the two approaches, in terms of core aims, trajectories and affiliations. We started this article by arguing that understanding the conceptual points of synergy and difference in POP and EBP is important. In turn, it is valuable to understand how police practitioners understand the relationship between the two approaches. Failure to do so may impede the implementation and delivery of one or both approaches.

Drawing on a large sample of survey and interview data from nearly half of all police forces in England and Wales, we found strong practitioner support for the view that POP and EBP be viewed as 'two sides of the same coin' (Huey et al., 2021, p. 32), and that taken together they provide an important framework for orienting contemporary police work. However, it was also evident from

study participants that POP and EBP are not always connected organisationally nor in the minds of police personnel. Notably, it was felt that POP may appear more accessible (rightly or wrongly) to front line officers who can more readily draw on it (or frame their work in terms of it) in their everyday duties. However, the two approaches were certainly seen by most participants to, in principle, be complementary. Importantly, participants drew attention to an interest in synergising POP and EBP into a systematic process for the purposes of improving policing. That said, it was clear from our analysis that at the points in the processes where POP and EBP may align – the use of research-based evidence, assembling the knowledge base about effective responses to problems, the use of analysis within police work, and the evaluation of police relevant interventions and actions – there were consistent weaknesses in application. Our findings suggest that there is a long way to go to get either approach working effectively either separately or in synergy. We finish, therefore, with some observations on the conditions that might improve the prospects of synergy between EBP and POP.

First, it is important to remember that POP and EBP are the means to deliver improved outcomes and are not an end in themselves. Focussing on improved policing outcomes, will inevitably invoke the good practice associated with the two approaches. Secondly, there needs to be better connections between universities and police services to help bridge the gap between the evidence of EBP and the problem-solving of POP. This process is beginning with the emergence of ‘pracademics’ (people who might be considered at once an academic and practitioner in a field); the development of advanced courses in universities where police staff undertake research with and for their forces in the interests of solving problems; the generation of closer liaisons between universities and academics who are committed both to high quality research and devising bespoke solutions to local problems; and the appointment of research-skilled analysts who are responsible for remaining familiar with relevant research and making this available according to need for specific POP. Though this is not to say that this process is complete or without problems. Third, the silos that exist separating those identifying with POP and with EBP need to be broken wherever possible. Police services need not locate POP and EBP in different silos within forces, as we observed in undertaking the fieldwork for this article.⁸ There are promising signs that this is happening. Nor is there need EBP and POP conferences or journals or other forms of knowledge exchange to exist in silos. Fourth, EBP may reach out to and contribute to the local practice of POP by developing and adapting the types of methods that have been developed under its auspices to improve the delivery of POP. Clear examples might include estimates of local police-relevant harms; the matching of intervention-related evaluations to the specific problem situations addressed in POP, and the formulation of evaluation methods that reduce risks of bias in the assessment element of POP. Fifth, the development of exemplary EBP informed POP demonstration projects addressing substantial local problems that may both be drawn on elsewhere and also inspire the adoption of more rigorous POP elsewhere. Lastly, over the longer term, police personnel need to learn how to read research for its quality and for its relevance to their local situation, so that it can be drawn on sensitively and critically. Here evidence-based medicine, on which EBP is based, is clear: as well as generating evidence there is a need for practitioners to be more research savvy and critical. As Boulton et al. (2020) have illustrated, research evidence is not always identified or used correctly in policing. The catalyst for this is likely police training and professional development. Other initiatives may help police officers think more critically about research. The POP guides produced and made available under the auspices of popcenter, comprise a such an example. However, it would be helpful if proponents of EBP were to contribute to them.

In conclusion, notwithstanding the different origins of and certain conceptual contrasts between EBP and POP, the attraction of both within police services as sources of improvement provided to the public is understandable as is their wish to bring them together. The limited awareness of and inattention to research evidence by some police officers, even those wishing to embrace POP is striking. If the potential complementarity of POP and EBP is to be realised in practice, both the difficulties in bringing the fruits and methods of EBP to POP need to be recognised and strategies put in place to facilitate productive synthesis.

Notes

1. See for example, <https://www.college.police.uk/about/public-health> (15/11/2021)
2. <https://popcenter.asu.edu/> (16/02/2021)
3. <https://www.springer.com/journal/41887> (16/02/2021)
4. <https://www.campbellcollaboration.org/contact/coordinating-groups/crime-and-justice.html> (16/02/2021)
5. <https://www.policenow.org.uk/>
6. POLKA Toolkit (<https://whatworks.college.police.uk/toolkit/Pages/Toolkit.aspx>)
7. Indeed, as part of the wider study, 10 representative police forces were asked to provide relevant documents on problem solving. Specifically, it asked for any force policy on: problem solving; crime concentration (repeat offenders/victimisation); neighbourhood policing; demand management; or any other document that refers to a germane policing approach (i.e. evidence-based policing or intelligence led policing). A subsequent content analysis of the documents provided found no evidence of an amalgamation of POP and EBP processes (for more details see [reference to be added post-anonymisation])
8. Data on the number of officers and staff at each rank as of 31 March 2019 were obtained from the Home Office Police Workforce Statistics data, available at <https://www.gov.uk/government/collections/police-workforce-england-and-wales>

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Annex 1: Regression tables

For each of the survey questions mentioned in the main article, we created logistic regression models to establish whether respondents with different personal characteristics were more or less likely to give particular answers. This appendix presents the model specifications and results.

While 4,141 respondents answered some or all of the survey questions, only 2,590 respondents provided details of their personal characteristics. Only these respondents are included in the models presented here.

The personal characteristics used as predictor (independent) variables were the same in all the models, with only the response (dependent) variable being different. The predictors were:

- Whether the respondent held a university degree (true for 37% of respondents).
- Whether the respondent was female (true for 36%).
- Whether the respondent had worked in policing for more than 10 years (true for 71%).
- Whether the respondent was a police constable (the reference category, true for 46%), a supervisory police officer (true for 26%) or a member of police staff (i.e. not a police officer, true for 29%).
- Whether the respondent worked in response policing (true for 17%), neighbourhood policing (true for 14%) or another role (the reference category, true for 69%).

p-values in the tables below have been corrected for multiple comparisons within each set of questions using Holm's method.

POP and evidence

Half of respondents chosen at random were asked whether they thought problem solving was important to evidence-based policing. Of those respondents, half (i.e. one quarter of all respondents, again chosen at random) were asked if they agreed with the statement 'problem solving is an important aspect of evidence-based policing' and the second quarter were asked if they agreed with the statement 'problem solving is *not* an important aspect of evidence-based policing'. In each case, respondents were asked to choose one of 'I tend to agree with this statement', 'I tend to disagree with this statement' and 'I don't know or I have no opinion on this statement'. Responses to the second version of the question were then reversed to remove the potential for any bias in the way in which the question was worded. Overall, 85% of respondents answered the version of this question presented to them.

The remaining half of respondents were asked if they agreed with either 'Using research evidence is an important aspect of problem solving' or 'Using research evidence is *not* an important aspect of problem solving', with the same answer options as for the other pair of questions.

Logistic regression models were used to determine whether any personal characteristics predicted whether respondents agreed with these statements or not (respondents who answered 'I don't know or I have no opinion on this statement' were excluded from the model).

Problem solving is an important aspect of evidence-based policing (78% of respondents agreed)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	2.25	0.29	<0.001	9.50
holds a university degree	0.01	0.22	>0.999	1.01
is female	0.47	0.23	0.084	1.61
has worked in policing for more than 10 years	-0.58	0.26	0.047	0.56
is police staff	0.22	0.26	0.381	1.25
is a supervisory officer	0.91	0.29	0.003	2.47
works in neighbourhood policing	0.36	0.34	0.581	1.43
works in response policing	-0.30	0.27	0.258	0.74

Using research evidence is an important aspect of problem solving (79% of respondents agreed)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	2.96	0.36	<0.001	19.23
holds a university degree	-0.02	0.26	>0.999	0.98
is female	0.03	0.27	0.915	1.03
has worked in policing for more than 10 years	-0.30	0.32	0.344	0.74
is police staff	0.83	0.41	0.091	2.29
is a supervisory officer	-0.20	0.28	0.473	0.82

(Continued)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	2.96	0.36	<0.001	19.23
holds a university degree	-0.02	0.26	>0.999	0.98
is female	0.03	0.27	0.915	1.03
has worked in policing for more than 10 years	-0.30	0.32	0.344	0.74
is police staff	0.83	0.41	0.091	2.29
is a supervisory officer	-0.20	0.28	0.473	0.82
works in neighbourhood policing	0.24	0.40	0.581	1.27
works in response policing	-0.67	0.30	0.053	0.51

Sources of research-based information and evidence

Respondents were asked 'When dealing with crime and disorder issues, what information do you tend to use to understand the problem or choose responses?', presented with 12 potential sources of information and for each source asked to choose one option from 'I use this frequently', 'I use this sometimes', 'I use this rarely', 'I have not used this but I am aware of it' and 'I was not aware of this'. For the purposes of the regression models presented here, respondents were classified as having used a source of information if they answered that they had used it 'frequently' or 'sometimes'. These questions were answered by 74% of respondents.

Intelligence reports (used by of 85% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	1.79	0.16	<0.001	5.96
holds a university degree	0.03	0.12	>0.999	1.03
is female	0.19	0.12	>0.999	1.21
has worked in policing for more than 10 years	0.51	0.13	<0.001	1.66
is police staff	-1.56	0.15	<0.001	0.21
is a supervisory officer	0.00	0.18	>0.999	1.00
works in neighbourhood policing	1.85	0.31	<0.001	6.38
works in response policing	-0.10	0.18	>0.999	0.91

Information from crime reports (used by of 84% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	1.62	0.16	<0.001	5.07
holds a university degree	0.07	0.12	>0.999	1.07
is female	0.16	0.12	>0.999	1.18
has worked in policing for more than 10 years	0.47	0.12	0.001	1.60
is police staff	-1.42	0.14	<0.001	0.24
is a supervisory officer	0.14	0.18	>0.999	1.15
works in neighbourhood policing	1.37	0.24	<0.001	3.94
works in response policing	0.16	0.18	>0.999	1.17

Information from 999/101 calls (used by of 83% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	1.57	0.15	<0.001	4.81
holds a university degree	0.14	0.12	>0.999	1.15
is female	0.17	0.12	>0.999	1.19
has worked in policing for more than 10 years	0.22	0.12	0.444	1.24
is police staff	-1.10	0.13	<0.001	0.33
is a supervisory officer	-0.05	0.16	>0.999	0.95
works in neighbourhood policing	0.98	0.20	<0.001	2.67
works in response policing	0.51	0.19	0.053	1.66

Information from partner agencies (used by of 70% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	0.37	0.12	0.002	1.44
holds a university degree	0.27	0.10	0.055	1.31
is female	0.48	0.10	<0.001	1.62
has worked in policing for more than 10 years	0.41	0.10	<0.001	1.50
is police staff	-0.57	0.11	<0.001	0.56
is a supervisory officer	0.29	0.12	0.120	1.33
works in neighbourhood policing	1.52	0.19	<0.001	4.56
works in response policing	-0.65	0.12	<0.001	0.52

Information from community meetings or groups (used by of 42% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-1.35	0.13	<0.001	0.26
holds a university degree	0.19	0.09	0.377	1.20
is female	0.33	0.09	0.004	1.39
has worked in policing for more than 10 years	0.53	0.10	<0.001	1.69
is police staff	0.25	0.11	0.131	1.28
is a supervisory officer	0.83	0.11	<0.001	2.29
works in neighbourhood policing	2.08	0.15	<0.001	8.03
works in response policing	-0.54	0.13	<0.001	0.58

POLKA Knowledge Bank (used by of 18% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-2.27	0.16	<0.001	0.10
holds a university degree	0.29	0.11	0.085	1.34
is female	0.06	0.11	>0.999	1.06
has worked in policing for more than 10 years	0.51	0.14	0.001	1.66
is police staff	0.44	0.14	0.011	1.55
is a supervisory officer	0.83	0.13	<0.001	2.30
works in neighbourhood policing	-0.54	0.17	0.008	0.58
works in response policing	-0.76	0.18	<0.001	0.47

Police national Knowledge Hub (used by of 16% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-2.16	0.16	<0.001	0.12
holds a university degree	0.15	0.11	>0.999	1.17
is female	0.10	0.11	>0.999	1.11
has worked in policing for more than 10 years	0.32	0.13	0.115	1.37
is police staff	0.40	0.14	0.025	1.49
is a supervisory officer	0.47	0.13	0.004	1.61
works in neighbourhood policing	-0.14	0.16	>0.999	0.87
works in response policing	-0.31	0.17	0.376	0.74

College of Policing Crime Reduction Toolkit (used by of 13% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-2.36	0.18	<0.001	0.09
holds a university degree	0.10	0.12	>0.999	1.11
is female	0.19	0.13	>0.999	1.21

(Continued)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-2.36	0.18	<0.001	0.09
holds a university degree	0.10	0.12	>0.999	1.11
is female	0.19	0.13	>0.999	1.21
has worked in policing for more than 10 years	0.08	0.14	>0.999	1.09
is police staff	0.22	0.16	0.465	1.25
is a supervisory officer	0.79	0.14	<0.001	2.20
works in neighbourhood policing	0.42	0.15	0.032	1.52
works in response policing	-0.64	0.21	0.020	0.53

National Police Library (used by of 12% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-2.02	0.17	<0.001	0.13
holds a university degree	0.09	0.13	>0.999	1.09
is female	0.12	0.13	>0.999	1.12
has worked in policing for more than 10 years	-0.03	0.14	>0.999	0.97
is police staff	-0.08	0.16	0.604	0.92
is a supervisory officer	0.11	0.15	>0.999	1.12
works in neighbourhood policing	-0.10	0.18	>0.999	0.91
works in response policing	-0.20	0.18	>0.999	0.82

POP Center (used by of 8% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-2.91	0.22	<0.001	0.05
holds a university degree	0.08	0.16	>0.999	1.09
is female	-0.02	0.16	>0.999	0.98
has worked in policing for more than 10 years	0.05	0.18	>0.999	1.05
is police staff	0.31	0.20	0.457	1.36
is a supervisory officer	0.64	0.18	0.004	1.90
works in neighbourhood policing	0.82	0.18	<0.001	2.27
works in response policing	-0.62	0.28	0.186	0.54

CrimeSolutions.gov (used by of 3% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-4.08	0.37	<0.001	0.02
holds a university degree	-0.22	0.27	>0.999	0.80
is female	-0.15	0.27	>0.999	0.86
has worked in policing for more than 10 years	0.10	0.30	>0.999	1.10
is police staff	0.74	0.32	0.131	2.10
is a supervisory officer	0.71	0.32	0.168	2.03
works in neighbourhood policing	0.58	0.30	0.206	1.79
works in response policing	-0.37	0.46	>0.999	0.69

Campbell Collaboration systematic review libraries (used by of 2% participants)

predictor	co-efficient	std. error	p-value	odds ratio
intercept	-4.22	0.45	<0.001	0.01
holds a university degree	0.68	0.32	0.308	1.97
is female	-0.57	0.35	>0.999	0.56
has worked in policing for more than 10 years	-0.28	0.35	>0.999	0.76

(Continued)

(Continued).

is police staff	0.52	0.40	0.465	1.69
is a supervisory officer	0.57	0.40	0.755	1.77
works in neighbourhood policing	0.15	0.40	>0.999	1.16
works in response policing	-2.10	1.03	0.252	0.12
