Article

Identifying the adoption of policing styles: A methodology for determining the commitment to problem-oriented policing amongst police forces in England and Wales

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Abstract Previous research consistently demonstrates that problem-oriented policing (POP) can address a range of policing issues; hence its continued appeal and relevance to current practice. However, there are well-documented challenges in terms of its implementation and sustenance within police forces. Studies of policing styles have yet to thoroughly assess the long-term commitment to POP within police forces in England and Wales. To this end, we first revisit and revise previous research findings on policing styles. Then, we advance a methodology for retrospectively measuring police force POP commitment using two novel indicators—problem-oriented projects submitted to the Tilley Award and those applied as part of the Crime Reduction Programme. We then rank police forces in terms of POP commitment. The empirical evidence and methodology presented here can be used to further examine contemporary adherence to POP as well as the role of policing styles in long-term crime falls or other policing outcomes in England and Wales.

Introduction

Successful policy implementation plays a crucial role in government strategies to tackle crime (Bullock *et al.*, 2002; Hough, 2004), and through the adoption of specific practices, police forces can act as a central catalyst for reducing crime at the local level (e.g. hot-spot policing—Braga *et al.*, 2019). Since the 2000s, attempts to improve policing in England and Wales have resulted in a range of initiatives designed either to refocus the attention of policing (e.g. neighbourhood policing—Her Majesty's Inspectorate of Constabulary (HMIC), 2008; Home Office, 2010), to transform policing

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leadership, organizational culture, and decision-making (e.g. the creation of the College of Policing following the police leadership and training review undertaken by Neyroud, 2011), or exhortations to adopt a preventative, problem-oriented, and partnership model of policing (National Police Chiefs Council (NPCC), 2016).

Over the same period, victimization surveys and police-recorded crime data consistently point to dramatic falls in crime rates across different offence types in Western industrialized countries (with variation in timing, magnitude, and trajectory) (Aebi and Linde, 2010; Tseloni *et al.*, 2010; Van Dijk *et al.*, 2012; Tonry, 2014; Office for National Statistics (ONS), 2017). Can we therefore conclude that this 'crime drop' which is 'the most important criminological phenomenon of modern times' (Farrell *et al.*, 2014, p. 421) is attributable, at least in part, to transformations in policing practice and the adoption of specific policing styles? A wide range of theoretical perspectives has sought to explain these crime falls (Farrell, 2013), including some focused upon policing aspects (e.g. police officer numbers) and policing strategies. Findings from studies relating to officer numbers are mixed (Marvell and Moody, 1996; Sherman *et al.*, 1997; Levitt, 2004; Roeder *et al.*, 2015), whilst those examining the effect of policing strategies on recent long-term crime falls have predominantly focused on New York City (Bowling, 1999; Kelling and Sousa, 2001; Rosenfeld *et al.*, 2007; Zimring, 2011; Weisburd *et al.*, 2014). With notable exceptions, there is also a lack of research examining whether there is a long-term relationship between falls in crime rates and policing strategies at the national level in USA (Roeder *et al.*, 2015), in Australia (Brown, 2015) and, to our knowledge, in the UK (except for an important body of work by Hale *et al.* (2004, 2005) and Heaton (2009a, b)).

A primary barrier to determining the impact of policing upon falling crime levels, however, concerns the methodological challenge of operationalizing specific components of policing strategies, culture, and practices. Unless we can successfully capture the scale and essence of specific policy instruments within the research designs of crime reduction evaluations, we cannot determine the specific independent impact of policing in reducing crime levels. The aim of this article, therefore, is to lay the foundation for future studies seeking to investigate the role of policing styles in general, and problem-oriented policing (POP) in particular, in explaining developments such as the crime drop. It seeks to meet this goal by advancing a methodological approach for identifying the adoption of, and commitment to, policing styles at the police force level retrospectively. Specifically, it examines the extent to which police forces in England and Wales adopted POP between 1999 and 2003 (at the outset of the Tilley awards that were designed to promote this approach). We do so firstly by exploring the concept of policing styles, revisiting previous research focusing on police forces in England and Wales. We then evaluate individual police force submissions to the Tilley Awards, alongside success in securing funding from national initiatives requiring the implementation of a POP approach, as a means of determining the extent to which police forces in England and Wales were committed to this specific policing style.

Policing styles in England and Wales and the potential underestimation of the adoption of POP within previous studies

Policing styles represent the outcome of a myriad of factors, and can be reflected within 'the corporate ethos, approach and, to a lesser extent, working methods of each force' (Hale *et al.*, 2005, p. 4), as well as the actions and behaviour of policing teams and individual police officers (Wilson, 1968). At their inception, advocates of distinct policing styles or strategies often advance these as the cure required following the diagnosis of the need for

institutional reform and cultural change within contemporary policing (see Scott *et al.*, 2008 for a detailed articulation of the core elements of POP). Hale *et al.* (2004, 2005) examined 366 HMIC reports published between 1990 and 2001 to identify policing styles across 42 police forces (excluding City of London) in England and Wales before 2001. This primarily involved studying the most recent full inspection report published between 1998 and 2001. However, to ensure they could track the development of a style within a police force, they reviewed all reports from 1990 onwards. Hale *et al.* (2004) claimed police forces applied particular policing styles to different extents before 2001, namely intelligence-led policing (ILP), POP, partnership policing (PP), and geographic policing (GP). Based on Hale *et al.* (2004, 2005), Heaton (2009a, p. 166) provided a table presenting 42 police forces' policing styles prior to 2001.

Hale *et al.* (2004, 2005) and Heaton's (2009a) research collectively constitutes a substantial contribution to the policing literature and the study of policing styles in particular. The interrelated themes and characteristics of different policing practices pose a challenge in arriving at accepted definitions, and the identification, of specific policing styles. This has implications for the assessment of the scale, and factors that can shape the adoption, of policing styles across police forces within specific jurisdictions. In the context of 'what works' and communicating ideas around best practice, this also has operational policing as well as academic implications—a point recognized by the recent attempt to develop an operational definition of evidence-based policing by the College of Policing (2021). Having revisited the literature and analysed several alternative sources, here we suggest some revisions to Hale *et al.* (2004, 2005) and Heaton's (2009a) work in terms

of the overarching classification of policing styles and the identified policing styles of specific police forces. We argue that an alternative reading of the evidence suggests a more substantive adoption of POP by police forces across England and Wales than was originally suggested. For example, according to Hale *et al.* (2004, p. 298):

> Geographic policing is sometimes also referred to as 'sector' or 'neighbourhood policing' and 'relies upon officers becoming sensitive to community needs and taking long-term responsibility for problem-solving, frequently in consultation with other agencies' (see Brownlee and Walker, 1998 for a detailed description).

Although defined as GP, we argue here that this can, in essence, equally be treated as a POP approach (Goldstein, 1979, 1990) given the neighbourhood policing setting of most forms of POP in UK (Bullock *et al.*, 2021a). Recently, Sidebottom *et al.* (2020, p. 57) found that 'problem-solving is synonymous with and mainly practised by neighbourhood policing teams'. Therefore, one might equally define this neighbourhood-based policing strategy as small-scale POP (or problem-solving policing) (e.g. Scott, 2000).[1]

Another of the policing styles Hale *et al.* (2004) defined was PP. Partnership is also one of the core components of POP (Goldstein, 1979, 1990), and its originator emphasized that 'it [POP] calls for the police to be more aggressive partners with other public agencies' (Goldstein, 1979, p. 257). Indeed, after the Crime and Disorder Act 1998, which required the establishment of formal partnerships amongst the police, local authority, probation and health services, 'the terms "problem-oriented partnership" or "problem-oriented policing and partnership" have come to be

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[1] However, as a note of caution, this does not necessarily mean that all forms of neighbourhood policing can confidently be taken to encompass POP given the variation in neighbourhood policing- and POP-related practices across police forces in England and Wales.

preferred to "problem-oriented policing" though the underlying meaning remains the same' (Sidebottom and Tilley, 2010, p. 2, see also Sidebottom *et al.*, 2020). Hale *et al.* (2004) gave the Safer Cities Programme as an example of PP, but the original report explicitly noted the Safer Cities Programme used a problem-solving approach (Ekblom *et al.*, 1996). Indeed, Hale *et al.* (2004, p. 300) noted that 'in this study objective assessment of such development (of partnership mechanisms/systems) was relatively difficult and therefore the figures (of police forces applying so-called PP) should be treated with appropriate caution.'

Taking into account the above points and having reviewed several additional sources (outlined below), we make some suggestions for revision to Hale *et al.* (2004, 2005) and Heaton's (2009a) original work in terms of the policing styles of particular police forces. Although the first large-scale POP development project was conducted in Leicestershire from 1995 to 1997 (Leigh *et al.*, 1996), Heaton (2009a) claimed that prior to August 2001, the policing style of Leicestershire was GP (when it could alternatively have been defined as explicitly POP or small-scale POP). Secondly, Heaton (2009a) noted that Surrey operated a GP strategy for many years. However, Leigh *et al.* (1996, p. 12) state that:

> Surrey was the only force currently [1996] implementing POP on a large scale and in a way that closely resembles Goldstein's concepts. Indeed, Surrey has a longer history of interest in the tenets of POP than any other force in England and Wales.

Thirdly, Merseyside's team visited seven police forces that had implemented POP to learn lessons from them. They included Surrey, Northumbria, Cleveland, Thames Valley, West Mercia, Leicestershire, and West Midlands (Merseyside

Police, 1997). Hence, it seems the policing styles of Northumbria, West Mercia, and West Midlands (which Heaton identified as ILP/PP, ILP/PP, and GP, respectively) were also perceived by officers in Merseyside as POP. Fourthly, Heaton (2009a) suggested North Wales implemented only ILP prior to August 2001. However, an entry to the Tilley Awards scheme by North Wales Police suggests that Gwynedd was implementing POP in 1999 (North Wales Police, 1999). Fifthly, West Yorkshire Police (1999, p. ii) noted that 'POP has been embraced throughout the Division [Eccleshill], at all levels'. Finally, Cambridgeshire Police (1999, p. 5) stated that 'POP is ingrained in everyday practice through a myriad of interlocking daily habits. Results of assessments at every level led to an expansion of POP to the Division.'

There was also an assertion by Heaton (2009a) that some police forces did not follow any policing styles. For instance, it was suggested that South Yorkshire did not implement any policing strategies prior to August 2001 despite their 2001 entry to the Tilley Awards scheme stating they established 'the Community Safety and Problem-Oriented Policing Department' in 2000. In addition, Dorset Police (1999, p. 1) noted that

> It could be argued that the advent of the Charminster Beat Team Project [1998], based on the principles of problem-oriented policing (POP), marked a significant moment in the policing of the Bournemouth Division.

Likewise, Devon and Cornwall introduced POP early in 1999 (Devon and Cornwall Police, 2000). The above evidence lends support to our suggested revisions to Hale et al. (2004, 2005) and Heaton's (2009a) original classification of policing styles. This alternative reading of the evidence suggests a more substantive adoption of POP by police forces across England and Wales during the time frame

in question (see the Findings section below for our suggested revisions).

Assessing the nature of, and police force commitment to, POP: a methodological approach

Having highlighted the challenges inherent in arriving at accepted definitions of specific policing styles, we commence this section by first explaining what POP is: we then explore some of the issues in defining and identifying a POP approach and lastly review previous research on POP commitment across police forces in England and Wales.

POP is one of several innovative policing strategies designed to transform police culture and performance. It aims to enhance police forces' crime prevention capacity by changing their organizational mindset from reactive to proactive (Goldstein, 1979, 1990). In practice, it seeks to manipulate the underlying conditions of recurring problems rather than targeting incidents on a case-by-case basis. It is commonly applied via the scanning, analysis, response, and assessment (SARA) framework (Eck and Spelman, 1987), which seeks to (1) identify problems; (2) analyse these problems; (3) develop tailored responses to these problems; and (4) assess whether those responses work.

Police forces across the world have implemented POP since the 1980s (Scott, 2000; Tilley and Scott, 2012; Hinkle et al., 2020; Sidebottom et al., 2020; Bullock et al., 2021a, b). Both narrative (Skogan and Frydl, 2004; Weisburd and Eck, 2004) and systematic reviews (Mazerolle et al., 2007; Braga and Weisburd, 2012; Mazerolle et al., 2013; Gill et al., 2014; Braga et al., 2015; Telep and Weisburd, 2016; Hinkle et al., 2020) have concluded that POP reduces crime. However, the reviewed studies usually assess the effectiveness of small-scale, problem-oriented projects, which is just one approach to determining the adoption and success of POP (see Scott, 2000, pp. 131–134). Equally, one can assess the comparative impact of POP in reducing crime rates, or the success of the 'POP movement' in transforming the everyday practice of a police force, or the extent of police force commitment to POP (Scott, 2000). However, Weisburd and Majmundar (2018, p. 15) note 'there has not been a study of whether a problem-oriented approach used widely in a city would reduce overall crime in that jurisdiction.' Importantly, previous studies tend to neglect the implementation fidelity of POP (Sidebottom et al., 2020) and, as Goldstein (2018, p. 8) states, '. . . commitment to POP varies from time to time, and from place to place.'

As noted above, previous research concerning the level of commitment to POP across police forces in England and Wales is limited. In 1998, HMIC examined the state of problem-solving in the police service nationally (HMIC, 1998), followed by another progress monitoring report in 2000 (HMIC, 2000). Read and Tilley (2000), whose report accompanied this inspection, produced a 'problem-solving checklist' but did not identify the level of individual police force commitment to POP. Some years later, Bullock et al. (2006) examined the development of POP in Lancashire and Hampshire constabularies and found six factors that were significant in the development and delivery of POP—leadership and management; practical help; analysis and evaluation; training; spreading good practice; and rewards and incentives. More recently, Sidebottom et al. (2020) provided a snapshot of POP as it was viewed and practised by 20 police forces in England and Wales in 2019 (see also Bullock et al., 2021a, b). However, like Read and Tilley (2000), they did not report individual police forces' level of commitment to POP.

From 2014 onwards, Her Majesty's Inspectorate of Constabulary and Fire and Rescue Services (HMICFRS, previously known as HMIC) have inspected and monitored police forces, and reported annually on their effectiveness, efficiency, and legitimacy via Police Effectiveness, Efficiency and Legitimacy (PEEL) assessments (HMICFRS, 2021). These reports look for evidence of whether problem-solving is clearly understood and

established in forces, but there is not a precise mechanism to identify the extent of commitment to problem-solving across police forces (nor to the adoption of specific policing styles). Similarly, guidance and the HMICFRS template for Force Management Statements (FMS) (a self-assessment that Chief Constables prepare and give to HMICFRS each year) does not include a section for problem-solving practices—although police forces can state in their FMS reports that they adopt a problem-solving approach without providing specific details. Therefore, as a mechanism for measuring POP commitment across police forces, using these reports can be problematic.

Methodology

Here we present the POP commitment indicators used to develop our methodological approach for ranking police forces in terms of their POP commitment. Whilst this represents a transferable approach to identifying policing style adherence, any focus upon a specific policing style necessitates the development of bespoke indicators. To provide a baseline for future studies, our assessment of police force commitment to POP in England and Wales therefore addresses two specific issues:

- What were the policing strategies of police forces in England and Wales prior to 2001?
- What was the level of commitment of police forces to POP between 1999 and 2003?

Our adopted time frame reflects several factors. First, the Tilley Awards requested problem-oriented project submissions from 1999. Secondly, the Crime Reduction Programme (which promoted a problem-oriented approach) ran between 1999 and 2002. Finally, we selected 2003 as an end point due to the potential adoption of competing police styles (and hence the difficulty in isolating a commitment to POP) following the mandated adoption of the National Intelligence Model (or ILP) by April 2004 (Bullock *et al.*, 2006; Maguire and John, 2006), and the growing popularity of neighbourhood policing models after 2006 (Bullock *et al.*, 2006; Longstaff *et al.*, 2015).

To examine the adoption of policing styles prior to 2001, we complement the evidence base from previous findings (Hale *et al.* 2004, 2005; Heaton, 2009a, b) by using relevant books and peer-reviewed articles, problem-oriented project entries to the Tilley Awards, and organizational plans regarding POP implementation (accessed via the ASU Centre for Problem-Oriented Policing—https://popcenter. asu.edu/). An ideal methodology for assessing POP commitment and how this changes over time would be to ascertain police force adherence to the publicly available 'problem-solving checklist' (Read and Tilley, 2000). As an alternative proxy for POP commitment levels, determining the presence within other police forces of the six significant factors in the development and delivery of POP in Lancashire and Hampshire (Bullock *et al.*, 2006) would constitute a different methodological approach. Other possible indicators of POP commitment might include:

- whether police forces have sent personnel to national POP conferences (UK, US, New Zealand);
- internal police databases of POP project reports that include projects that fail to meet the specified criteria for award-programme submissions;
- publications on POP by police personnel;
- evidence of having trained police personnel in POP; and
- establishment of internal force POP award programmes and/or organizational incentives to engage in POP (e.g. for promotion, secondments or forming part of performance development reviews (PDRs)).

However, an absence of, or lack of access to, the required data for the current retrospective study render these unfeasible methodological approaches.

Adopted indicators of POP commitment

To identify levels of POP commitment across police forces, and to overcome the identified limitations, we have examined:

- Problem-oriented projects for all crime types submitted by police forces to the Tilley Awards between 1999 and 2003 ($n = 314$) and

- Problem-oriented projects implemented by police forces as part of the Crime Reduction Programme that ran between 1999 and 2002 ($n = 299$).

We note from the outset that these data sources are not gold standard, but constitute the only publicly available data sources to advance scientific knowledge concerning the extent of commitment to POP across police forces in England and Wales over the specified time period.

The Tilley Awards were launched in 1999 by the then Home Office Policing and Reducing Crime Unit to share good examples of POP practice across police forces in the UK (see Bullock *et al.*, 2006 for a detailed history). The award was open to submissions annually between 1999 and 2012, ceased to run between 2013 and 2017, but South Yorkshire Police officially re-established the Tilley Awards in 2018 (Sidebottom *et al.*, 2020).

The Crime Reduction Programme ran from 1999 to 2002 and sought to learn what works in crime prevention via 18 streams (Homel *et al.*, 2004). The Targeted Policing Initiative (TPI) which covered all crime types (Bullock *et al.*, 2002), and the Reducing Burglary Initiative (RBI) (Hope *et al.*, 2004; Millie and Hough, 2004; Hirschfield, 2007), were two programme streams that, respectively, helped police forces to develop and implement, or explicitly required the use of, a problem-oriented approach. Our analysis is based on the available data pertaining to both initiatives which were accessed via The National Archives (2003a, b, c, 2006; see Supplementary Appendix Tables S1 and S2).

Ranking police forces in terms of commitment to POP

Police forces in England and Wales were ranked on the basis of three indicators of POP commitment. Firstly, we calculated the annual number of individual police force Tilley Awards project submissions as a percentage of the total number of submissions across all forces for each year between 1999 and 2003. We then calculated the average percentage of project submissions across the relevant period to deliver a measure of the degree of sustained POP commitment (SPC) for each police force. These data were then ranked to determine the scale of SPC for each force relative to their English and Welsh counterparts (SPC rank value). To create our second and third indicators of POP commitment using the TPI and RBI projects, we ranked police forces based on the scale of respective initiative funding received by individual forces as a percentage of the total amount of funding received by all police forces across England and Wales (TPI rank and RBI rank values). Importantly, analysis of the resulting values revealed no clear association with the size or characteristics of police forces in terms of the level of funding received. Finally, we calculated an overall average rank value for each police force by using the relevant SPC rank, TPI rank and RBI rank values to identify the overall commitment of police forces to POP between 1999 and 2003 (OVERALL rank in later Table 2).

Findings

Policing styles in England and Wales prior to 2001

As identified above, a revised version of the policing style analysis undertaken by Heaton (2009a) is presented to determine the policing styles landscape across forces in England and Wales prior to 2001. Table 1 presents a re-working of Heaton's original analysis that substitutes POP for GP and PP. This re-working posits that 33, rather than 9, police forces had adopted a POP approach prior

Table 1: Revised policing styles prior to August 2001 (based upon original analysis by Heaton (2009a).

Police force	Policing style (Heaton 2009a)	Policing style (revised)	Police force	Policing style (Heaton 2009a)	Policing style (revised)	Police force	Policing style (Heaton 2009a)	Policing style (revised)
Avon and Somerset	GP/ILP	POP/ILP	Gwent	GP	POP	Northumbria	ILP/PP	ILP/POP
Bedfordshire	GP/ILP	POP/ILP	Hampshire	ILP	ILP	Nottinghamshire	ILP	ILP/POP
Cambridgeshire	GP/ILP	POP/ILP	Hertfordshire	ILP/POP	ILP/POP	South Wales	No style	No style
Cheshire	ILP	ILP	Humberside	GP	POP	South Yorkshire	No style	POP
Cleveland	POP/PP	POP	Kent	ILP	ILP	Staffordshire	ILP/POP/PP	ILP/POP
Cumbria	ILP	ILP/POP	Lancashire	GP/POP/ILP	POP/ILP	Suffolk	GP/ILP	POP/ILP
Derbyshire	No style	No style	Leicestershire	GP	POP	Surrey	GP/ILP	POP/ILP
Devon and Cornwall	No style	POP	Lincolnshire	ILP	ILP	Sussex	GP/POP	POP
Dorset	No style	POP	Merseyside	ILP/POP/GP	ILP/POP	Thames Valley	POP/PP/ILP	POP/ILP
Durham	ILP/POP/PP	ILP/POP	Metropolitan	Various	Various	Warwickshire	ILP/GP/PP	ILP/POP
Dyfed Powys	GP/ILP/PP	POP/ILP	Norfolk	GP	POP	West Mercia	ILP/PP	ILP/POP
Essex	No style	No style	North Wales	ILP	ILP/POP	West Midlands	GP	POP
Gloucestershire	GP	POP	North Yorkshire	ILP	ILP	West Yorkshire	ILP/PP	ILP/POP
Greater Manchester	ILP/POP/PP	ILP/POP				Northamptonshire	GP/ILP/PP	POP/ILP
Wiltshire	GP/ILP/PP	POP/ILP						

to 2001. Across the 43 police forces in England and Wales, only 3 had no identifiable policing style prior to 2001 (down from the 6 initially identified by Heaton). Twenty-two police forces applied both POP and ILP before 2001, with a further 11 implementing only POP (and 5 only ILP). Whilst this evidence illustrates a high level of POP uptake across police force areas, this does not automatically denote similar levels of application or equal commitment to this policing style.

Police force commitment to POP between 1999 and 2003

Table 2 presents the relative values (in relation to the Tilley Awards submissions (TASs) indicator for each year) and ranked position for each police force in England and Wales for each indicator of POP commitment between 1999 and 2003 (SPC Rank, TBI Rank, and RBI Rank). To identify the consistency of individual police force commitment to POP in terms of TAS, we calculated the coefficient of variation (CFVAR; the standard deviation value divided by the

mean value) to determine the level of SPC variation for each individual police force between 1999 and 2003 (SPC CFVAR). The overall number of Tilley Awards project submissions and outcomes broken down by year are presented in Table 3, which shows that the majority of the project submissions consist of 'other' submissions ($n = 293$) followed by 'Winner' submissions ($n = 15$).

In terms of overall POP commitment (OVERALL Rank), Avon and Somerset and Greater Manchester were the highest-ranked police forces between 1999 and 2003—closely followed by the Metropolitan Police. City of London, North Yorkshire, and Wiltshire made no TAS and generally fared little better in terms of their relative allocation of TBI and RBI funding. Six police forces submitted to the Tilley Awards every year between 1999 and 2003, suggesting a sustained commitment to POP. Some forces (Cheshire, Hertfordshire, Lincolnshire, and Northamptonshire) only submitted projects in a single year (2001), and of these, only

Table 2: Police force commitment to POP in England and Wales, 1999–2003

Police force	POP commitment based upon TAS (%)					SPC (average TAS 1999–2003) (%)	SPC CFVAR	SPC Rank	TBI Rank	RBI Rank	Average Rank	OVERALL Rank
	1999	2000	2001	2002	2003							
Avon and Somerset	3.28	5.66	6.56	11.76	8.45	7.14	0.45	2	5	8	5.00	1=
Bedfordshire	1.64	0.00	0.00	0.00	0.00	0.33	2.24	37=	26=	20	27.67	31=
Cambridgeshire	1.64	0.00	1.64	0.00	0.00	0.66	1.37	31=	25	21	25.67	30
Cheshire	0.00	0.00	1.64	0.00	0.00	0.33	2.24	37=	22	35	31.33	39
City of London	0.00	0.00	0.00	0.00	0.00	0.00	N/A	41=	26=	36=	34.33	42=
Cleveland	6.56	3.77	3.28	0.00	2.82	3.29	0.71	9	26=	11	15.33	12
Cumbria	4.92	0.00	3.28	5.88	5.63	3.94	0.62	5	12	33	16.67	15
Derbyshire	1.64	1.89	0.00	2.94	0.00	1.29	0.99	23	15	10	16.00	14
Devon and Cornwall	1.64	3.77	3.28	0.00	0.00	1.74	1.02	13	10	13	12.00	9
Dorset	1.64	3.77	0.00	0.00	2.82	1.65	1.02	15	26=	26	22.33	24=
Durham	0.00	0.00	0.00	0.00	2.82	0.56	2.24	35=	26=	23	28.00	33
Dyfed-Powys	4.92	0.00	0.00	0.00	0.00	0.98	2.24	27	26=	36=	29.67	36
Essex	0.00	0.00	1.64	2.94	1.41	1.20	1.03	24	26=	24	24.67	28=
Gloucestershire	0.00	0.00	0.00	1.47	2.82	0.86	1.48	28	26=	29	27.67	31=
Greater Manchester	1.64	3.77	8.20	2.94	2.82	3.87	0.65	6	4	5	5.00	1=
Gwent	1.64	1.89	0.00	0.00	0.00	0.71	1.38	29	26=	36=	30.33	37
Hampshire	0.00	0.00	0.00	0.00	2.82	0.56	2.24	35=	17	36=	29.33	34=
Hertfordshire	0.00	0.00	3.28	0.00	0.00	0.66	2.24	31=	26=	36=	31.00	38
Humberside	0.00	1.89	0.00	1.47	0.00	0.67	1.39	30	16	6	17.33	16
Kent	1.64	3.77	1.64	0.00	0.00	1.41	1.10	21	6	31	19.33	19
Lancashire	26.23	28.30	27.87	27.94	36.62	29.39	0.14	1	26=	12	13.00	10
Leicestershire	1.64	1.89	1.64	0.00	1.41	1.32	0.57	22	26=	16	21.33	22
Lincolnshire	0.00	0.00	3.28	0.00	0.00	0.66	2.24	31=	19	22	24.00	27
Merseyside	8.20	5.66	4.92	4.41	2.82	5.20	0.38	4	2	15	7.00	5=
Metropolitan	4.92	1.89	4.92	1.47	4.23	3.49	0.48	8	1	7	5.33	3
Norfolk	0.00	0.00	0.00	1.47	1.41	0.58	1.37	34	26=	28	29.33	34=
North Wales	0.00	1.89	1.64	4.41	0.00	1.59	1.14	16	21	30	22.33	24=
North Yorkshire	0.00	0.00	0.00	0.00	0.00	0.00	N/A	41=	23	32	32.00	40
Northamptonshire	0.00	0.00	1.64	0.00	0.00	0.33	2.24	37=	9	17	21.00	20=
Northumbria	1.64	3.77	3.28	5.88	4.23	3.76	0.41	7	18	9	11.33	8
Nottinghamshire	3.28	0.00	3.28	2.94	1.41	2.18	0.66	11	7	3	7.00	5=
South Wales	0.00	0.00	0.00	4.41	2.82	1.45	1.42	20	11	25	18.67	18
South Yorkshire	0.00	0.00	4.92	2.94	1.41	1.85	1.13	12	26=	4	14.00	11
Staffordshire	1.64	5.66	0.00	0.00	0.00	1.46	1.68	19	26=	18	21.00	20=
Suffolk	1.64	0.00	3.28	2.94	0.00	1.57	0.99	17	26=	27	23.33	24=
Surrey	4.92	3.77	0.00	0.00	4.23	2.58	0.93	10	20	36=	22.00	23
Sussex	1.64	3.77	0.00	0.00	0.00	1.08	1.54	25	3	19	15.67	13
Thames Valley	3.28	1.89	3.28	0.00	0.00	1.69	0.97	14	26=	14	18.00	17
Warwickshire	0.00	0.00	0.00	0.00	1.41	0.28	2.24	40	24	36=	33.33	41
West Mercia	1.64	1.89	0.00	1.47	0.00	1.00	0.93	26	14	34	24.67	28=
West Midlands	4.92	9.43	0.00	10.29	1.41	5.21	0.89	3	13	2	6.00	4
West Yorkshire	1.64	0.00	1.64	0.00	4.23	1.50	1.15	18	8	1	9.00	7
Wiltshire	0.00	0.00	0.00	0.00	0.00	0.00	N/A	41=	26=	36=	34.33	42=

Table 3: Number of project submissions (all crime types) by outcome and year

Year	Winner	Finalist	Others	Total
1999	1	2	58	61
2000	3	2	48	53
2001	2	2	57	61
2002	8	0	60	68
2003	1	0	70	71
Total	15	6	293	314

Northamptonshire was a finalist in this year. Others (Bedfordshire, Dyfed-Powys, and Warwickshire) only made intermittent submissions that may point to the presence of moments of POP evangelism or 'bursts of enthusiasm' (Bullock *et al.*, 2021a, p. 4) rather than any sustained cultural, organizational shift. An examination of the SPC CFVAR values in Table 2 is further testament to the sustained/intermittent expression of POP commitment in the form of TASs.

Although Lancashire was ranked highest in terms of TASs between 1999 and 2003, their overall ranked position of 10th highlights the importance of distinguishing between POP commitment inputs (projects) and outcomes (grant income). In general, highly ranked police forces in terms of TASs were either consistently ranked highly in terms of their share of TBI and RBI income (e.g. Avon and Somerset, Greater Manchester, the Metropolitan Police), or also ranked highly in relation to either TBI income (e.g. Merseyside), or RBI income (e.g. Northumbria). Other forces attained higher TBI and RBI rankings compared to their TAS ranking (e.g. Humberside, West Yorkshire), which may point to a conscious decision to pursue resources over prestige. Whilst these results suggest that looking at one indicator might be misleading in determining the level of commitment to POP, there is clear evidence of distinct differences in the POP commitment profiles of police forces between 1999 and 2003.

Discussion

We have argued in this article for the need to develop empirical measures of police force POP commitment in order to facilitate further research in relation to (1) policing styles and (2) more specifically the impact of POP upon crime rates, victimization levels, and crime hotspots. We have suggested some revisions to previous findings regarding policing styles across police forces in England and Wales prior to 2001 and presented a new methodological approach for assessing the level of POP commitment amongst police forces using empirical data relating to TASs and the securing of central POP-oriented funding to tackle specific crime issues. The scale of commitment to POP between 1999 and 2003 varies considerably across police forces in England and Wales, suggesting the presence of early adopters (Dyfed-Powys), laggards (Essex), and forces that have shown a sustained commitment to embracing this policing style (Avon and Somerset, Greater Manchester, Lancashire, and Northumbria). Sidebottom *et al.* (2020, p. 9) reported that 'even in police forces with a longstanding commitment to problem-solving, interview participants felt that the approach is far from mainstreamed.' Our findings support this assertion, having identified differing levels of commitment to POP by police forces.

Limitations of the study

To our knowledge, this study is the first of its kind. However, a number of limitations should be acknowledged. Firstly, problem-oriented project entries to the Tilley Awards may simply reflect successful or 'showcase' projects rather than encapsulating the full range of problem-oriented approaches being adopted within specific police forces. Secondly, the ideal indicator of POP commitment is proof of the extensive application of this framework, as Goldstein envisaged. However, the majority of Award submissions are far from being what might constitute a 'holistic' application

of POP (Bullock *et al.*, 2006; Sidebottom *et al.*, 2020). Furthermore, although submissions require an endorsement letter from a senior representative (Assistant Chief Constable or above) indicating internal recognition of success (Bullock *et al.*, 2006), it is not possible to determine entirely whether the submitted projects represent the tip of the iceberg in terms of POP commitment—or are merely singular exemplars of the application of a POP approach in relation to a specific crime reduction initiative.

Thirdly, whilst acknowledging there is a need for police forces to demonstrate a commitment to POP to be awarded funding (Bullock and Tilley, 2003) there are many other factors (e.g. prior track record, partnership working, alignment of proposed initiative with contemporary policy, and policing 'flavours of the month') that can determine success when applying for government funds (such as the TBI and RBI). It is also highly likely that some forces were committed to POP, but whose track record did not match the criteria for securing funding. By contrast, it is equally possible that the TAS record of apparently POP-committed forces might simply represent a box-ticking approach to curry favour with the Home Office to secure future funding. Despite these limitations, we used these funding initiatives as the second indicator of POP commitment for the following reasons. Firstly, these are (in our view) the most appropriate publicly available sources to identify the level of POP commitment across police forces, retrospectively. Secondly, irrespective of actual organizational commitment, the submitted projects applied a problem-oriented approach. Thirdly, it can be argued the police forces that received funding for the projects as part of government-supported programmes applied POP on a larger scale compared to others. Therefore, it is highly likely these projects improved the degree of traction of POP within police forces that received funding when compared to others.

The final limitation worth acknowledging here is that our indicators are essentially measuring one-off projects, many of which may be the brainchild of POP committed individual officers. The total number of projects or the amount of funding received by a police force were deemed to reflect a wider culture of POP within the force, but we have limited evidence that POP practice spread wider than the projects we have measured or that POP was force-wide practice. Furthermore, when the individuals acting as the driving forces for POP exit a police force or move roles, the initial burst of a POP orientation can quickly wither and die and represent a flash in the pan as opposed to a sustained transformation in organizational culture in terms of policing styles (Scott, 2000; Bullock *et al.*, 2021b).

Conclusion

Determining police forces' policing styles and their commitment to POP retrospectively has been methodologically challenging due to (1) the lack of clarity concerning terminology and the characteristics that defined specific policing styles and (2) the absence of a validated tool (e.g. Law Enforcement Management and Administrative Statistics (LEMAS)) for this purpose. Studies such as Sidebottom *et al.* (2020) should be conducted annually (including data reporting for individual police forces), whilst PEEL assessments should also include a detailed analysis of problem-solving practices across police forces. The development of a national problem-solving monitoring and recording system (Bullock *et al.*, 2021b) or a questionnaire akin to LEMAS could be trialled to determine the extent of involvement in problem-solving projects for this purpose. Publicly available data would make a future assessment of the commitment to POP (and the subsequent impact on crime) much easier and remove the need to use retrospective, proxy measures. In addition, future studies on policing strategies can arguably make use of currently collected data on the Home Office Safer Streets

Fund (SSF) and are showcased in revised versions of the SSF Toolkit (https://whatworks.college.police.uk/About/News/Pages/Safer_streets.aspx).

The methodology presented here grew out of a larger research project undertaken by the authors that was designed to evaluate the role of policing styles or POP commitment in the crime drop in England and Wales. This framework is, however, highly transferable. For example, future studies could use our framework to evaluate the extent of the adoption of contemporary developments such as evidence-based policing, or the current moves towards the adoption of public health and trauma-informed approaches. Ultimately, findings from future studies that can more accurately capture the extent of, sustainability, and catalysts for specific policing styles such as POP, intelligence-led, or evidence-based policing would help the Home Office target limited resources more effectively, whilst enabling the College of Policing and senior police officers to develop a better understanding of 'the state of play' with regard to what works in developing and implementing policing styles that deliver better outcomes for their own organizations, victims of crime, and the wider public.

Supplementary material

Supplementary material is available at *Policing* online.

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