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RESEARCH ARTICLE

Policing futures: transforming the evidence-based policing paradigm through interdisciplinarity and epistemological anarchism

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ABSTRACT

Evidence-based policing (EBP) has gained prominence in jurisdictions across the core anglosphere. Its paradigmatic approach to knowledge production, and the assessment and validation criteria for research designs and their outputs remains in contention. Concurrently, interdisciplinarity (ID) has proliferated in other areas of research and practice, yet EBP remains untouched by these global developments and it appears a neglected area of academic debate. In combination with limited uptake at institutional and practice levels, a troubled landscape, and predictions of an uncertain and extraordinarily complex future operating environment (FOE): the question arises whether the present EBP paradigm is sufficient to meet the challenges and implications for policing and police research. This conceptual paper makes an epistemic assessment of the paradigm and drawing on ID and epistemological anarchism (EA) it contributes a perspective on its theoretical and methodological innovation as a futures-focused endeavour. It concludes that if EBP is to be maximised as a knowledge enterprise in support of policing in the FOE, a broader epistemology is necessary, that embraces methodological pluralism, eschews epistemic monolithism and proactively applies ID and EA to research, policy and practice.

Introduction

Since its introduction evidence-based policing (EBP) (Sherman 1998, 2013, 2015) has gained prominence in jurisdictions across the core anglosphere. However, its paradigmatic approach to knowledge production, assessment and validation criteria for research designs and their outputs remains in contention. Concurrently, interdisciplinarity[1] (ID) has proliferated in other areas of research, policy and practice such as, *inter alia*, criminology, legal and criminal justice research (Agnew 2011, 2013, Henry and Bracy 2012, Dunaff and Pollack 2013, Henry 2019), crime science (see Brown, 2020, Wortley *et al*. 2020a, 2020b), teaching and education (Haynes 2002, Klein 2010, DeZure 2019, Gombrich and Hogan 2019, Budwig and Alexander 2020), social work (Bronstein 2003, Bellamy *et al*. 2013), medicine and healthcare (Torday 2013, Bhaskar *et al*. 2017, Burggren *et al*. 2019, McMurtry *et al*. 2019), information technology and computing (Küppers and Lenhard 2006, Edwards 2010) earth sciences (Bhaskar 2010, Hicks *et al*. 2010, Baker 2019), and business studies (Ryan and Neumann 2013, Marques 2019). It has gained momentum due to the increased complexities of societies, emerging research problems beyond the scope of single disciplines, and

the impact of new and developing technologies (Klein 2019). As Fuller and Collier (2004) note, a further reason is the perceived failure of expertise to live up to its own 'hype'.

In contrast, EBP appears unchanged by these global developments, and ID represents an anomalous area in police research and practice. In combination with limited uptake at institutional and practice levels (Sherman 2015, Hunter *et al.* 2017), being described as a 'troubled landscape' (Bullock *et al.* 2020, p.10), a confusing 'sticky' concept (Brown 2020, p.96), and an 'unfinished project with an uncertain future' (Holdaway 2020, p.16), the question arises whether the present EBP paradigm is theoretically and methodologically sufficient to meet the challenges presented by complex socio-political contexts, 'wicked' problems, and the future operating environment[2] (FOE) of policing in society.

This paper provides a nuanced epistemic assessment of the present paradigm and contributes a new perspective on its theoretical and methodological innovation by drawing on ID and epistemological anarchism[3] (EA) (Feyerabend 2010). It argues that there is no reason to privilege specified forms of knowledge production, assessment and validation criteria over others based on paradigmatic preference, and that to do so may restrict the creativity and innovation in research needed to respond to the future situation as outlined. It concludes that a reconceptualization is necessary, to evolve a more inclusive paradigm that is transcendent, transgressive, and transformative comprising a broader epistemology that embraces methodological pluralisation, eschews epistemic monolithism in the form of a 'canon' of knowledge, and applies greater interdisciplinarity to research practice. Thereby, reconciling 'what works' and 'what matters' for policing and society (Punch 2015, p.16), the problem of the method and 'knowledge wars' (Williams and Cockcroft 2019, p. 131), and the perceived dominance of a particular variant of EBP (Holdaway 2020).

It should be noted from the outset that the paper is not intended as an assault on EBP *per se*. There have been successes since its introduction and it is an impressive research and practice movement encouraging partnerships between academics and practitioners, highlighting the importance and contribution of research-informed approaches to specified policing situations (see Punch 2015, Lum and Koper 2017, Brown *et al.* 2018, Braga and Tucker 2019). However, the FOE will place reliance on research evidence on an expansive level, across a wider range of policing and social contexts, beyond concerns about crime reduction. It seems unlikely then that a narrow theoretical and methodological approach will prove sufficient in this regard. Moreover, innovation aligns with the zeitgeist and direction of travel of ID in other areas of research, offers a way of resolving the deep tensions among some academics and practitioners and the translation of research into policy and practice: a necessary and sufficient step in the evolution of EBP.

The paper begins with a concise explanation of the characteristics of the FOE, then examines key areas of contention, specifically relating to EBP's axiology: epistemological assumptions, hierarchy of methodologies and preference for certain research methods, all aimed at the construction of a defined canon of knowledge. It then examines the particular problem of approaching crime pathologically, couched in medical terms and excised from complex socio-political contexts, before setting out the theoretical and methodological value that ID and EA can contribute to transforming the paradigm.

The future operating environment for policing

The FOE for policing is described in a detailed 'futures' report by the UK College of Policing, which draws from the Ministry of Defence's Global Strategic Trends assessment report, research, interviews and workshops with stakeholders, academics and 'futures' practitioners (UK Ministry of Defence 2018, College of Policing 2020). It highlights the challenges and issues of the future, providing information and resources which the police may use to develop plans, strategies and capabilities. This FOE is forecast to be characterised by: greater inequality and social fragmentation leading to deprivation and increased violence; unregulated online (mis)information polarising society; technology-related civil unrest; dependence on artificial intelligence (AI); growing vulnerability to crime in an

elderly and diverse population; a fragile global economy and climate change leading to greater competition for resources, and malign state and non-state actor involvement in national affairs (US National Intelligence Council 2017, UK Ministry of Defence 2018, College of Policing 2020).

Policing is likely to face threats from: the expanding surveillance society and digital (dis)information influencing public trust and confidence, reconfigured police workforce and resources, and operating conditions at global, national and local levels of ever-increasing complexity (College of Policing 2020). Moreover, the intersection of these, in as yet unforeseen ways, is likely to create 'uncertainty' in policing organisation and delivery (College of Policing 2020, p. 5). In order to respond to this dramatically changed landscape it is anticipated that new skills, structures and resources on a scale not seen before will be required, that transcend traditional disciplinary boundaries (Accenture 2018). Therefore, the requirements of police research, in understanding, informing and supporting responses to these threats, is likely to involve transformation at a level beyond simply 'tweaking' the present EBP paradigm. As Punch (2015) highlights it is not 'amenable to complex areas of policing with multiple factors and shifting parameters' (2015, p.6), of the sort likely to be seen in the FOE. Dealing with these complexities and their consequences involves attention to much more than the crime reduction remit of policing in society.

Contending with the present EBP paradigm

EBP is originally associated with the work of Sherman (1998), drawn from the field of medicine, it reflects a trend in other areas of public services for evidence-based policy and practice, notably associated with cost effectiveness and efficiency (see Sherman 2007, 2013, Mitchell and Huey 2019). EBP is an approach that applies 'research to guide [police] practice and evaluate practitioners. It uses the best evidence to shape the best practice' (Sherman 1998, p. 4). Furthermore, EBP 'demands that the police adopt and advance evidence-based policy' (Weisburd and Neyroud 2011, p.1). According to Mitchell and Huey (2019), the goal is 'to understand "what works" in order to produce policies, practices and programs that not only help policing to become more effective and efficient but increase community safety and well-being' (2019, p. xvii). This is to be achieved through the establishment of a codified body of evidence (Brown *et al.* 2018). However, a claim to knowledge being derived only through specified means, for the construction of an epistemic monolith invites critique and it is one about which ID and EA have much to say. Feyerabend (2010) regarded such claims as 'intellectual hegemony' (2010, p. xiii), designed to reinforce orthodoxy, prevent new ways of thinking and of 'doing' science outside the control of an epistemocracy.

In as much as its originator embodies EBP, Tilley (2009) describes two versions: the realist and the rhetorician (referred to as Sherman 1 and Sherman 2 respectively). The work of Sherman 1, Tilley suggests, is of 'huge value' in recognising diverse conditions of criminal justice interventions, its apparent scientific realism and pragmatic approach to data and data collection in testing theories (2009, p. 135). However, such value is paradigmatically bounded and limited, as the present paper argues. The direction suggested by Sherman 2, appears to waive the 'subtle thinking' of Sherman 1, 'repudiates theory' and prefers a certain 'methodological hammer', thereby 'pos[ing] risks to research, practice and important liberal principles' (Tilley 2009, p. 135). While there has been limited support expressed for mixed methods, and the contextualisation of research evidence by practitioners (Sherman 1998, 2013, Neyroud and Weisburd 2014, Welsh 2019): on balance the rhetoric of EBP appears to persist (see Sherman 2013, 2015, 2018, 2019, 2022a, 2022b, Bullock, Fielding and Holdaway 2020, Holdaway 2020, Huey *et al.* 2021, Mitchell 2022, Piza and Welsh 2022).

In emphasising the requirement to construct and use a 'best' evidence base, the current EBP movement rests on a traditional or 'normal' view of science (see Kuhn 1977, 2012), that conceives of knowledge and its acquisition in two ways: (1) as growing by accumulation over time, and (2) that successful science is contingent on a 'special' method (Putnam 1982, p. 196). The implication of this is that any idea or fact falling outside is picayune, non-knowledge. However, the approach

is problematic because it takes a retrospective, static view of knowledge, as that capable of being attained only through specified means, in a linear way.

From a Kantian perspective we should not dismiss the contribution of cognitive agency to what constitutes knowledge (see Stueber 2011). Instead, it may be understood as a co-production of the 'thinking mind' (Putnam 1982, p. 197) and the empirical 'facts', a synthesis that comes to represent a knowledge product and allows us to communicate it to others (Goldmann 1971, Hospers, 1997). In socially situated research, to weigh more heavily empirical aspects of inquiry, obtained through a narrow paradigm, without consideration of the specific context and cognitive agency of the researcher or practitioner (Wood *et al.* 2017), creates potential for an impoverished 'thin' version of knowledge. Moreover, the empirical 'facts' of a situation or research problem do not speak for themselves without means of interpretation (Putnam 1977): the interpretative framework for EBP currently provided by a paradigm constituted by dogma and partiality. We should also note that the results of observations and experiments can be interpreted in many ways, each capable of providing adequate, valid explanation beyond paradigmatic preference, in what we might call 'equivalent descriptions' (Putnam 1977, p. 491). When applied to real world problems deriving from complex social contexts, such descriptions may be of utility or not depending on their domain of application, but they cannot simply be dismissed as 'evidence' because they do not fit with the tradition of paradigmatic assumptions (see Putnam 1982, p. 201). Policing is relational, focused on practical problems in society and peoples' lives, where the empirical meets the rational: it is in this realm particularly that 'reason finds legitimate employment' (Scruton 2002, p. 150).

Despite a claim that EBP research is at a Kuhnian pre-paradigmatic stage in its development (Mitchell and Huey 2019, p. 4) (notwithstanding that an appeal to the existence of a pre-paradigmatic stage is misplaced, since Kuhn (1977) recanted the idea), it has settled on a highly specific *modus operandi*. Patently, EBP rests on a paradigm comprising: identifiable theories drawn from environmental and experimental criminology; a conceptual vocabulary, three preferred research methods (the randomised control trial (RCT), quasi-experiment and systematic review), having consensus among adherents such that it appears epistemologically unproblematic to them (Brown 2020). However, as Wood *et al.* (2017) note it may be too early to embed such a narrow paradigm in policing research, practice and education, as some in the EBP movement have called for (Weisburd and Neyroud 2011, Neyroud and Weisburd 2014, Sherman 2015).

It should be acknowledged that others within the EBP movement recognise in theory if not practice, that different types of research could inform police policy and practice, yet validatory questions endure about how to tell 'what works' and how research evidence can be validated as 'best' (Lum and Koper 2017, p. 21). The UK College of Policing has expanded its interpretation of what constitutes 'evidence' by referring to the 'best available', deriving from research and sources deemed most pertinent to the problem. As Brown (2020, p. 97) notes, in circumstances where little or no research evidence exists, 'professional consensus' may be taken as the best available. In theory, this appears to reinstate the status of cognitive agency of practitioners alongside an 'evidence base' consisting in certain empirical 'facts': it remains to be seen how far this is permitted to proceed, and if a hierarchy prevails.

Pawson and Tilley (1997) propose a realist evaluative approach to the question of 'what works', by taking account of variations in the 'context, causal mechanisms, and outcomes' of crime reduction interventions (Brown 2020, p. 99). The acronym EMMIE, depicting the *effectiveness*, causal *mechanisms*, *moderators*, *implementation* issues and *economic* considerations of interventions (Johnson, Tilley and Bowers 2015), incorporates this realist approach and represents a system for assessing the reliability, validity, utility, and costs associated with implementation (Thornton *et al.* 2019). EMMIE was created to support the *What Works Centre for Crime Reduction* based within the UK College of Policing, with primary focus on meeting the 'evidence needs of policymakers and practitioners' (Sidebottom and Tilley 2022, p. 76). The framework provides a systematic means of evaluating research about crime reduction by considering 'what works, for whom, in what circumstances and how?' (Sidebottom and Tilley 2020, p. 74), however, we should note this is only one part of the

multifarious function and activities of policing in society. The approach represents a move away from the narrowness of EBP, but whether EMMIE can be applied or developed to have utility, for the needs of policymakers and practitioners faced with intersecting trends and threats in the FOE which are not specifically crime reduction related, remains open.

As to the methods applied in the current EBP paradigm, they fall under three design headings: exploratory, observational, and causal (Ariel 2019), however, the latter has primacy in its hierarchy. In critical discourse about EBP research methods, the utility of greater diversity, particularly of those qualitative and mixed in nature has been argued for (Punch 2015, Brown *et al.* 2018, Williams and Cockcroft 2019). While calls for, and nascent signs of acceptance of other approaches do appear in the EBP movement, it is doubtful that the epistemology and paradigmatic assumptions can realistically accommodate it, due to the primacy given to causality and the dominance of causal research designs (Ariel 2019). Therefore, the consequence of the hierarchy of methods within the present paradigm appears irrevocable, since axiomatically it is bound to questions of causality and the notion of defining something as 'best' through specified means: an intractable situation.

EBP involves not only translational criminology, that is, how the products of research 'turn into outputs, tools, programmes, interventions and actions […] in practice' (Lum and Koper 2017, p. 266), but also their 'translation, use, implementation, and institutionalization' (Lum and Koper 2017, p. 266). This reflects the ultimate ambition of the EBP movement to wed a particular version of knowledge production and an evidence base with the policies, management and practices of policing in society on a global scale (see Piza and Welsh 2022). However, in establishing a constitution from which policing might proceed, it will be important for the movement not to lose sight of the gamut of policing functions, social contexts and demands of the FOE: otherwise, the paradigm may become the theory of policing, reframing what policing is and merely creating it in its own image.

In summary, there are substantial grounds to conclude that there is no compelling reason other than dogma and paradigmatic preference for EBP to claim a body of knowledge based on which research outputs are deemed 'best' or otherwise. In light of the volume of contention, and the need for reflexive, innovative research to support policing in the FOE, viewing its current state as *ne plus ultra* appears misplaced. To cleave to the present form resists necessary alternatives and might be considered an example of 'scientific chauvinism' (Feyerabend 2010, p. 27), buttressing an epistemic monolith. Crucially, this is not helpful for the type of futures-focused knowledge enterprise (in the sense of a project or epistemic endeavour) that may be required for policing and society.

The problem with treating crime as a 'disease'

An overlooked premise of the present paradigm is its conception of crime: that legally defined and viewed pathologically. Paradigmatically, EBP is less concerned with *why* and *how* crime occurs, its socio-political contextual levels and matters of social construction, focusing instead on what is to be done about it by applying 'what works'. However, crime cannot be so easily excised from its social contexts, nor police practices reduced to limited sets of variables (see Punch 2015). To do so, oversimplifies the social world and makes EBP unidirectional in its focus and application, driven primarily by considerations of efficiency and cost effectiveness (see Sherman 2015, Cowen and Cartwright 2020), implemented by those deemed expert and empowered to do so: policing as something that is done *to* society, rather than on a dialogic and informed consensual basis.

EBP frames crime in pathological terms, as a 'disease', since its inception this is self-evident in the terminology adopted from the field of medicine, such as *inter alia*, 'control', 'dosage', 'treatment', and 'treatment protocols', (see Sherman 1998, 2013, Lum and Koper 2017, College of Policing 2018, Mitchell and Huey 2019). As to this medical nomenclature, as far as we know crime is not pathological, capable of being diagnosed and 'treated' in the same way as an infectious or organic disease, thus together with the complexities involved, policing of it is not synonymous with medicine or other therapeutic interventions.

Notably, public consent for policing, a principle so often appealed to by policy makers and police leaders, is not as informed or given the same priority in EBP as medicine. This imports a significant ethical dimension to how research is conducted in a public policing environment and evidence applied in practice, particularly in the context of 'what works' and predictive policing (see The Alan Turing Institute 2017). Ethical considerations will be paramount where policing engages with big data, machine learning and AI: matters that EBP will be obliged to wrestle, if it is to operate with integrity and for the public good in the FOE. Policing is also heavily legislated and codified in many areas of professional practice, unlike the field of medicine where the clinician's judgement is sacrosanct: such practitioner discretion is demonstrably reduced and restricted for distinct theoretical and methodological reasons in the EBP approach (Williams and Cockcroft 2019).

That the EBP movement represents an important stage in the development of police research and practice is acknowledged, providing a shift from that based on experiential knowledge alone (Wood *et al.* 2017), having most utility in crime reduction, patrol strategy and calls for service contexts (see Braga 2008, Lum and Koper 2017, Braga and Tucker 2019). However, as Holdaway (2020, p. 29) points out, it needs a more reflective and critical approach to the full ambit of policing in society. Many facets of policing are not crime-related, from the mundane to 'wicked' problems, consensus is lacking among academics and practitioners about their relevance, nature, causes and consequences (Pohl *et al.* 2019), so as to evade approaches provided by the self-imposed 'strong' vision of regimes like EBP (Innes 2020, p. 134). Since its introduction it has had limited success, appears to have withdrawn from other relevant disciplinary areas like sociology and broader criminology, and is increasingly siloed as a specific variant of research and practice (see Holdaway 2020).

Having discussed key axiological dimensions and the limitations of the current EBP paradigm, we might consider how a reconceptualization would facilitate alternative ways of researching and thinking about policing problems and solutions in the future. It is argued that this is where ID and EA may add transformative value.

On transforming the EBP paradigm through ID and EA

First, it should be noted that ID is not synonymous with multidisciplinarity (MD): an approach aiming for a wider scope of knowledge and methods while *retaining* the separation of specific disciplines and their ideological boundaries (Apostel 1972, Gieryn 1983, Klein 2019). There is evidence that MD already occurs in police research, though not always in a systematic way (Punch 2015, p. 6). However, pursuing MD alone adds minimal transformative value and magnifies existing disciplinary problems with the current EBP paradigm discussed above. Instead, applying ID may move EBP research beyond mere 'fenced-off' collaboration, and introduce a form of integration described as a 'process of critically evaluating disciplinary insights and creating common ground […] to create a more comprehensive understanding' (Repko 2012, p. 263).

While definitional consensus among interdisciplinarians can be elusive, there are commonalities that suffice for our purposes. In short terms, ID is an approach that integrates disciplinary perspectives in order to develop new, overarching knowledge that transcends singularity (Repko 2008). The idea that the research journey and the knowledge 'product', is more than the sum of its parts. A fuller definition sees it as an approach that 'integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialised knowledge to advance fundamental understanding and solve problems […] beyond the scope of a single discipline or area of research practice' (NAS/NAE/IOM 2005, p. 188). This speaks to the type of problems and challenges facing policing research in the FOE and highlights the utility of a more inclusive paradigm for approaching them. In an 'anarchic' form uncontrolled by convention, ID challenges dominant structures of knowledge and the disciplinary rules surrounding them (Frodeman and Mitcham 2007, Boradkar 2019, Klein 2019): by way of example specific to EBP, the preferred methods for conducting research, interpreting results, grading of evidence and construction of a defined body of knowledge.

Theoretically, ID aims for the creation of conceptual frameworks for 'analyzing particular problems, integrating propositions across disciplines, and synthesizing continuities' (Klein 2019, p. 25). At a methodological level, it is directed at improving the quality of results by applying methods from other disciplines to develop and answer research questions or test hypotheses (Bruun *et al*. 2005). According to O'Rourke (2019) interdisciplinary research (what they refer to as cross-disciplinary) is 'context-sensitive' and 'sensitive to the exigencies of circumstance' (2019, p. 276), making it very suited to research in complex, multifaceted social arenas like policing. Having a multiplicity of methods to draw upon is a significant advantage, since it provides more options than those found in disciplinary singularity.

In a systematic way, a staged approach to conducting interdisciplinary research is suggested comprising: (1) problem-identification involving a community of researchers and stakeholders; (2) investigating cross-disciplinary method options, including the epistemological considerations; (3) decision-making about methods using multiple criteria rather than being discipline specified, and (4) formative and summative evaluation of decision-making, of both the quality and outcomes respectively (O'Rourke 2019, p. 282).

While not perfect and at times 'fragmented' (O'Rourke 2019, p. 276), ID provides a shift towards innovating the present EBP paradigm. Epistemologically, this critical stance (see Goodman and Elgin 1988) would offer another means of assessing research evidence as knowledge and its means of production, beyond the present hierarchy, by focusing on: the aim of inquiry; multiplicity and diversity of evidence obtained, range of disciplinary integration and the degree of 'penetration' into the policing problem(s) and social context(s). Moreover, it provides criteria for assessing the veracity and utility of interdisciplinary research by the 'degree to which new insights relate to antecedent disciplinary knowledge, the sensible balance reached in weaving disciplinary perspectives together, and the effectiveness with which *the integration of the disciplines advances understanding and inquiry* (emphasis added)' (Boix Mansilla 2006, p. 17). The focus here is not on giving primacy to convergence, but more importantly on what relation new knowledge has to existing, and whether and to what extent it provides advancement. ID provides the additional scope, range of methods and interpretative frameworks to be able to meaningfully explore and understand many of the problems of policing, beyond those of crime control.

Moving beyond EBP's narrow purview requires a degree of epistemological anarchism, in that the practice of science, as some interpret EBP to be, is an essentially 'anarchic enterprise' (Feyerabend 2010, p. 1). From a transgressive point of view this asserts that the pursuit of knowledge should not be required to adhere to a fixed set of rules in all circumstances (Staley 2014, p. 86). However, this is not to be confused with naïve anarchism that sees all rules as worthless, that should therefore be abandoned (Feyerabend 2010, p. 242). Certainly, this is not being called for in transforming the present EBP paradigm. However, Feyerabend's often misunderstood phrase 'anything goes' (2010, p. 7) explains that whatever axioms you believe underpin research, knowledge may be advanced by operating outside of them or in some instances by deliberately violating them. The notion of 'anything goes' does not dismiss being systematic, but it does elevate theoretical and methodological diversity: an openness to the possibility of other ways of conducting the knowledge enterprise, assessing and validating results, and of what constitutes knowledge 'products'.

As Feyerabend (2010) noted, the critical researcher 'compare[s] theories with other theories rather than with "experience", "data", or "facts" ' and 'will try to improve rather than discard views that appear to lose in the competition' (2010, p. 27). Those concerned with gaining maximal empirical content, to test hypotheses or substantiate their view, need a pluralistic methodology to fully investigate and understand areas of convergence and divergence (Feyerabend 2010, p. 14). This may mean working contrary to the paradigmatic tradition. A commitment to this type of knowledge enterprise abandons the privileging of method and attributing greater axiological worth to certain disciplinary methods than others. The history of science demonstrates that breakthroughs are rarely produced in a unified or linear way (Feyerabend 2010, 2011), often they occur through 'conceptual ruptures' where new theories are developed, conceptually incompatible with former

ones (Dimitrakos 2021, p. 470), yet they provide opportunity for further investigation and diverse ways of thinking about particular phenomena.

If the FOE of policing is as stark and challenging as forecast, then the EBP movement might reflect on Feyerabend's view that 'unanimity of opinion may be fitting for a rigid church. Variety of opinion is necessary for objective knowledge. And a method that encourages variety is also the only method compatible with a humanitarian outlook' (Feyerabend 2010, p. 25).

Concluding remarks

In providing a critique of the current EBP paradigm, and its approach to knowledge production, assessment and validation criteria, this paper aims to be conciliatory, identifying a route through which it can be transformed: building upon its strengths and providing a new perspective on its development by applying ID and EA to research practices and of what constitutes knowledge. Since its introduction to the policing world in 1998, EBP has evolved, yet so has critical dissent and fault lines in what the paradigm can realistically claim and achieve, risking it being siloed within its own disciplinary boundaries. It also appears as an outlier among other epistemic projects related to research and evidence-based policy and practice in the social sphere, which have embraced ID. It is to EBP's evolution that the present work contributes.

Policing futures will involve more than the crime reduction remit of police organisations. The epistemic outlook, preferred methods and focus of EBP may prove non-contiguous to many of the future problems of policing and society. These are likely to involve, although not exclusively, questions concerning: the 'value and ethics' of using AI, big data and data analytics to support policing activities; the building and maintenance of public trust and cooperation in a fragmenting society; social cohesion; the presence and impact of misinformation on police-public relations; policing of civil emergencies and public health crises; migration and resource competition; engagement with super-diverse communities; managing dissent and protest; working in an 'ecosystem' of multiple players and stakeholders, and preparing the police to become 'futures literate' (see College of Policing 2020, p. 79). Seeking solutions to these questions will be challenging, in such a way as to render research more difficult and less impactful through defined disciplinary matrices, calling for approaches applicable to emergent intersectional levels of policing in its social contexts.

The 'evidence base' from which policing operates in the future will need a constituency that is 'broad and diverse', rather than 'narrow and homogenous': the latter an inherent consequence of that consisting in knowledge products, produced in certain ways, about certain things. To paraphrase Feyerabend (2010, p. xix) the apparent success of 'science' and its methods, cannot be used as an argument for treating as yet unsolved problems, in a standardised way. Any approved means of knowledge production, and the assessment and validation of research evidence as 'best' or otherwise is socially derived, that is, through a community of scholars, 'experts' and the consumers of knowledge such as practitioners, yet this social epistemology is limited and controlled within the present EBP paradigm. A more inclusive one is necessary, consisting in theoretical and methodological diversity, which eschews epistemic monolithism and proactively applies ID and EA to research, policy and practice. Such an epistemology rejects placing certain knowledge and ways of knowing over others, and actively pursues diverse ways of 'doing' research, focusing on providing many different perspectives on a problem. It remains to be seen how far the UK College of Policing's reframing of what constitutes 'evidence' will be permitted to proceed, and if the realist inspired EMMIE framework can be applied or adapted to evaluate interdisciplinary work in an inclusive manner.

EBP scholars, policy makers and practitioners might pause to reflect on Feyerabend's assertion that necessary developments, arise not by clinging to orthodoxy but through deliberate abstention, missteps, changes of direction, and anarchic ways of approaching real world problems. Innovation of the EBP paradigm can be achieved through the transcendent, transgressive and transformative dimensions of ID and EA. The *zeitgeist* is of greater interdisciplinarity in researching the social world, representing a necessary step in the evolution of EBP, if it is to avoid becoming a 'thin'

knowledge enterprise. ID is an anomalous area of police research, from this space issues a clarion call for interdisciplinary scholars and practitioners to step forward, to theoretically and empirically contribute to advancement of the field. It is anticipated that this paper stimulates public, critical discourse in this regard. Finally, the message for researchers, policy makers, police leaders and professionals seeking creative and innovative ways of approaching policing futures, is that ID and EA may offer much to what you espouse and are likely to need.

Notes

1. Interdisciplinarity is an approach to research that *integrates* information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialised knowledge to advance fundamental understanding and solve problems, beyond the scope of a single discipline or area of research practice (NAS/NAE/IOM 2005).
2. The future operating environment of policing is set out in a detailed 'futures' report by the UK College of Policing. It draws from the Ministry of Defence's Global Strategic Trends report, research, interviews and workshops with stakeholders, academics and 'futures' practitioners. Its intention is to set out the challenges and issues for policing in the future and provide information and resources which the police can use to develop plans, strategies and capabilities (see College of Policing 2020).
3. Epistemological anarchism is a philosophical approach to the theory and production of 'knowledge' which posits that there are no useful and exceptionless methodological rules governing the progress of science or the growth of knowledge. That there are many ways of conducting and interpreting scientific inquiry, and of evaluating the products of research beyond what is commonly described as the 'scientific method.' Progress is not seen as a linear progression or convergent process (see Feyerabend 2010, 2011).

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References

Accenture. 2018. *Reimagining the police workforce: a vision for the future* [online]. Available from: https://www.accenture.com/_acnmedia/accenture/conversion-assets/dotcom/documents/local/sg-en/1/accenture-reimagining-police-workforce-for-the-future-pov-uk.pdf. [Accessed 1 November 2021].

Agnew, R., 2011. *Toward a unified criminology: integrating assumptions about crime, people and society*. New York: New York University Press.

Agnew, R., 2013. Integrating assumptions about crime, people and society: response to the reviews of *toward a unified criminology*. *Journal of theoretical and philosophical criminology*, 5 (1), 74–93.

The Alan Turing Institute. 2017. *Ethics advisory report for West Midlands Police* [online]. London: The Alan Turing Institute. Available from: https://www.turing.ac.uk/sites/default/files/2018-11/turing_idepp_ethics_advisory_report_to_wmp.pdf. [Accessed 15 August 2019].

Apostel, L., 1972. *Interdisciplinarity: problems of teaching and research in universities*. Paris: Organization for Economic Cooperation and Development.

Ariel, B., 2019. Not all evidence is created equal: on the importance of matching research questions with research methods in evidence-based policing. In: R.J. Mitchell, and L. Huey, eds. *Evidence based policing: an introduction*. Bristol: Policy Press, 63–86. ISBN 978-1-4473-3975-5.

Baker, V.R., 2019. Interdisciplinarity and earth sciences: transcending limitations of the knowledge paradigm. In: R. Frodeman, J. T. Klein, and R. C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 88–100. doi:10.1093/oxfordhb/9780198733522.01.8

Bellamy, J., *et al.*, 2013. Implementing evidence-based education in social work: a transdisciplinary approach. *Research on social work practice*, 23 (4), 426–436. doi:10.1177/1049731513480528.

Bhaskar, R., 2010. Contexts of interdisciplinarity. In: R. Bhaskar, C. Frank, K. Georg Hoyer, P. Naess, and J. Parker, eds. *Interdisciplinarity and climate change: transforming knowledge and practice for our global futures*. New York, NY: Routledge, 1–26.

Bhaskar, R., Danermark, B., and Price, L., 2017. *Interdisciplinarity and wellbeing: a critical realist general theory of interdisciplinarity*. Abingdon: Routledge.

Boix Mansilla, V., 2006. Assessing expert interdisciplinary work at the frontier: an empirical exploration. *Research evaluation*, 15 (1), 17–29. doi:10.3152/147154406781776075.

Boradkar, P., 2019. Taming wickedness by interdisciplinary design. In: R. Frodeman, J. T. Klein, and Roberto C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 456–470. doi:10.1093/oxfordhb/9780198733522.001.0001

Braga, A.A., 2008. *Problem-oriented policing and crime prevention*. 2nd ed. Monsey, NY: Criminal Justice Press.

Braga, A.A., and Tucker, R., 2019. Problem analysis to support decision-making in evidence-based policing. In: R. J. Mitchell, and L. Huey, eds. *Evidence-based policing: an introduction*. Bristol: Policy Press, 29–40.

Bronstein, L.R., 2003. A model for interdisciplinary collaboration. *Social work*, 48 (3), 297–306. DOI: 10.1093/sw/48.3.297.

Brown, J., *et al.*, 2018. Extending the remit of evidence-based policing. *International journal of police science & management*, 20 (1), 38–51. doi:10.1177/1461355717750173.

Brown, J., 2020. Evidence-based policing: competing or complementary models? In: N. Fielding, K. Bullock, and S. Holdaway, eds. *Critical reflections on evidence-based policing*. Abingdon: Routledge, 95–114.

Bruun, H., *et al.*, 2005. *Promoting interdisciplinary research: the case of the Academy of Finland*, publications of the Academy of Finland. Series 8/05. Helsinki: Academy of Finland.

Budwig, N., and Alexander, A.J., 2020. A transdisciplinary approach to student learning and development in university settings. *Frontiers in psychology*, 11, doi:10.3389/fpsyg.2020.576250.

Bullock, K., Fielding, N., and Holdaway, S., 2020. Introduction: evidence-based practice and policing: background and context. In: N. Fielding, K. Bullock, and S. Holdaway, eds. *Critical reflections on evidence-based policing*. Abingdon: Routledge, 3–14.

Burggren, W., *et al.*, 2019. Interdisciplinarity in the biological sciences. In: R. Frodeman, J. T. Klein, and Roberto C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 101–113. doi:10.1093/oxfordhb/9780198733522.001.0001

College of Policing, 2018. *The effects of patrol dosage on crimes and calls for service in night time economy hotspots* [online]. Available from: https://whatworks.college.police.uk/Research/Research-Map/Pages/ResearchProject.aspx?projectid = 449 [Accessed 10 November 2021].

College of Policing. 2020. *Taking the long view: policing into* 2040 [online]. Available from: https://whatworks.college.police.uk/About/News/Pages/Policing2040.aspx [Accessed 14 November 2021].

Cowen, N., and Cartwright, N., 2020. Street-level theories of change: adapting the medical model of evidence-based practice for policing. In: N. Fielding, K. Bullock, and S. Holdaway, eds. *Critical reflections on evidence-based policing*. Abingdon: Routledge, 52–71.

DeZure, D., 2019. Interdisciplinary pedagogies in higher education. In: R. Frodeman, J.T. Klein, and R.C.S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 558–572. doi:10.1093/oxfordhb/9780198733522.001.0001.

Dimitrakos, T., 2021. The source of epistemic normativity: scientific change as an explanatory problem. *Philosophy of the social sciences*, 51 (5), 469–506. doi:10.1177/0048393120987901.

Dunaff, J.L., and Pollack, M.A., 2013. *Interdisciplinary perspectives on international law and international relations: the state of the art*. Cambridge: Cambridge University Press.

Edwards, P., 2010. *A vast machine: computer models, climate data, and the politics of global warming*. Cambridge, MA: MIT Press.

Feyerabend, P., 2010. *Against method*. 4th ed. London: Verso.

Feyerabend, P., 2011. *The tyranny of science*. Cambridge: Polity Press.

Frodeman, R., and Mitcham, C., 2007. New directions in interdisciplinarity: broad, deep, and critical. *Bulletin of science, technology & society*, 27 (6), 506–514. doi:10.1177/0270467607308284.

Fuller, S., and Collier, J.H., 2004. *Philosophy, rhetoric, and the end of knowledge: a new beginning for science and technology studies*. Mahwah, NJ: Erlbaum. doi:10.4324/9781410609625.

Gieryn, T.P., 1983. Boundary work and the demarcation of science from non-science. Strains and interests in professional ideologies of scientists. *American sociological review*, 48, 781–795.

Goldmann, L., 1971. *Immanuel Kant*. London: New Left Books.

Gombrich, C., and Hogan, M., 2019. Interdisciplinarity and the student voice. In: R. Frodeman, J. T. Klein, and Roberto C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 544–557. doi:10.1093/oxfordhb/9780198733522.001.000.397-411.

Goodman, N., and Elgin, C.Z., 1988. *Reconceptions in philosophy and other arts and sciences*. Indianapolis: Hackett.

Haynes, C., 2002. *Innovations in interdisciplinary teaching. American Council on education series on higher education*. Westport, CT: Oryx Press.

Henry, S., 2019. Interdisciplinarity in the fields of law, justice and criminology. In: R. Frodeman, J. T. Klein, and Roberto C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 397–411. doi:10.1093/oxfordhb/9780198733522.001.000.

Henry, S., and Bracy, N.L., 2012. Integrative theory in criminology applied to the complex social problem of school violence. In: A. Repko, W.H. Newell, and R. Szostak, eds. *Case studies in interdisciplinary research*. Thousand Oaks, CA: Sage, 259–282.

Hicks, C., Fitzsimmons, C., and Polunin, N., 2010. Interdisciplinarity in the environmental sciences: barriers and frontiers. *Environmental conservation*, 37 (4), 464–477. doi: 10.1017/S0376892910000822.

Holdaway, S., 2020. The development of evidence-based policing in the UK: social entrepreneurs and the creation of certainty. In: N. Fielding, K. Bullock, and S. Holdaway, eds. *Critical reflections on evidence-based policing*. Abingdon: Routledge, 15–32.

Hospers, J., 1997. *An introduction to philosophical analysis*. 4th ed. Abingdon: Routledge.

Huey, L., *et al.*, 2021. *Implementing evidence-based research: a how-to guide for police organisations*. Bristol: Policy Press.

Hunter, G., May, T., and Hough, M., 2017. *An evaluation of the 'what works' centre for crime reduction: final report*. London: ICPR Birkbeck.

Innes, M., 2020. Wicked policing and magical thinking: evidence for policing problems that cannot be 'solved' in an age of 'alternative facts'. In: N. Fielding, K. Bullock, and S. Holdaway, eds. *Critical reflections on evidence-based policing*. Abingdon: Routledge, 133–152.

Johnson, S.D., Tilley, N., and Bowers, K.J., 2015. Introducing EMMIE: an evidence rating scale to encourage mixed-method crime prevention synthesis reviews. *Journal of experimental criminology*, 11, 459–473. doi:10.1007/s11292-015-9238-7.

Klein, J.T., 2010. *Creating interdisciplinary campus cultures*. San Francisco, CA: Jossey-Bass.

Klein, J.T., 2019. Typologies of interdisciplinarity: the boundary work of definition. In: R. Frodeman, J. T. Klein, and Roberto C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 21–33. doi:10.1093/oxfordhb/9780198733522.001.000.

Kuhn, T., 1977. Second thoughts on paradigms. In: F. Suppe, ed. *The essential tension: selected studies in scientific tradition and change*. Chicago: University of Chicago Press, 293–319.

Kuhn, T., 2012. *The structure of scientific revolutions*. 4th ed. Chicago: University of Chicago Press.

Küppers, G., and Lenhard, J., 2006. Simulation and a revolution in modelling style: from hierarchical to network-like integration. In: J. Lenhard, G. Küppers, and T. Shinn, eds. *Simulation: pragmatic construction of reality*. Dordrecht: Springer, 3–22.

Lum, C., and Koper, C.S., 2017. *Evidence-based policing: translating research into practice*. Oxford: Oxford University Press.

Marques, J., 2019. Creativity and morality in business education: toward a trans-disciplinary approach. *The International journal of management education*, 17 (1), 15–25.

McMurtry, A., Kilgour, K.N., and Rohse, S., 2019. Health research, practice and education. In: R. Frodeman, J. T. Klein, and Roberto C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 412–426. doi:10.1093/oxfordhb/9780198733522.001.000.

Mitchell, R.J., 2022. *Twenty-one mental models that can change policing: a framework for using data and research for overcoming cognitive bias*. London: Routledge.

Mitchell, R. J., and Huey, L., eds., 2019. *Evidence based policing: an introduction*. Bristol: Policy Press.

NAS/NAE/IOM (National Academy of Sciences, National Academy of Engineering, Institute of Medicine), 2005. *Facilitating interdisciplinary research*. Washington, DC: National Academies Press, 188.

Neyroud, P., and Weisburd, D., 2014. Transforming the police through science: the challenge of ownership. *Policing: a journal of policy and practice*, 8 (4), 287–293. doi:10.1093/police/pau048.

O'Rourke, M., 2019. Comparing methods for cross-disciplinary research. In: R. Frodeman, J. T. Klein, and Roberto C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 276–290. doi:10.1093/oxfordhb/9780198733522.001.0001.

Pawson, R., and Tilley, N., 1997. *Realistic evaluation*. London: Sage.

Piza, E.L., and Welsh, B.C., 2022. Evidence-based policing: research, practice, and bridging the great divide. In: E.L. Piza, and B.C. Welsh, eds. *The globalization of evidence-based policing: innovations in bridging the research-practice divide*. Abingdon: Routledge, 3–20.

Pohl, C., Truffer, B., and Hirsch-Hadorn, G., 2019. Addressing wicked problems through transdisciplinary research. In: R. Frodeman, J. T. Klein, and Roberto C. S. Pacheco, eds. *The Oxford handbook of interdisciplinarity*. Oxford: Oxford University Press, 319–331. doi:10.1093/oxfordhb/9780198733522.001.0001.

Punch, M., 2015. What really matters in policing? *European police science bulletin*, 13, 9–18.

Putnam, H., 1977. Realism and reason. *Proceedings and addresses of the American philosophical association*, 50 (6), 483–498. Available from: http://www.jstor.org/stable/3129784. [Accessed 12 August 2019].

Putnam, H., 1982. The philosophy of science. In: B. Magee, ed. *Talking philosophy: dialogues with fifteen leading philosophers*. New York: Oxford University Press, 194–209.

Repko, A.F., 2008. *Interdisciplinary research: process and theory*. Thousand Oaks, CA: Sage.

Repko, A.F., 2012. *Interdisciplinary research: process and theory*. 2nd ed. Thousand Oaks, CA: Sage.

Ryan, S., and Neumann, R., 2013. Interdisciplinarity in an era of new public management: a case study of graduate business schools. *Studies in higher education*, 38 (2), 192–206. doi: 10.1080/03075079.2011.571669.

Scruton, R., 2002. *A short history of modern philosophy: from descartes to wittgenstein*. 2nd ed. London: Routledge Classics.

Sherman, L.W., 1998. *Evidence-based policing. ideas in American policing*. Washington, DC: Police Foundation.

Sherman, L.W., 2007. Evidence based policing: what we know, and how we know it. Paper in Scottish Institute for Policing Research: Policing: Connecting Evidence and Practice. SIPR Annual Lectures 2012.

Sherman, L.W., 2013. The rise of evidence-based policing: targeting, testing, and tracking. *Crime and justice*, 42 (1), 377–451. doi:10.1086/670819.

Sherman, L.W., 2015. A tipping point for "totally evidenced policing" ten ideas for building an evidence-based police agency. *International criminal justice review*, 25 (1), 11–29. doi:10.1177/1057567715574372.

Sherman, L.W., 2018. Evidence-based policing: social organization of information for social control. In: E. Waring, D. Weisburd, and J. Travis, eds. *Crime & social organization*. New York: Routledge, 217–259. doi:10.4324/9781351325882.

Sherman, L.W., 2019. Targeting, testing and tracking: the Cambridge assignment management system of evidence based police assignment. In: R.J. Mitchell, and L. Huey, eds. *Evidence based policing: an introduction*. Bristol: Policy Press, 15–28.

Sherman, L.W., 2022a. Goldilocks and the three 'T's: targeting, testing and tracking for "just right" democratic policing. *Criminology and public policy*, 21, 175–196. doi: 10.1111/1745-9133.12578.

Sherman, L.W., 2022b. The Cambridge police executive programme: a global reach for pracademics. In: E.L. Piza, and B.C. Welsh, eds. *The globalization of evidence-based policing: innovations in bridging the research-practice divide*. London: Routledge, 295–318.

Sidebottom, A., and Tilley, N., 2020. Evaluation evidence for evidence-based policing: randomistas and realists. In: N. Fielding, K. Bullock, and S. Holdaway, eds. *Critical reflections on evidence-based policing*. Abingdon: Routledge, 72–92.

Sidebottom, A., and Tilley, N., 2022. EMMIE and the what works centre for crime reduction: progress, challenges, and future directions for evidence-based policing and crime reduction in the United Kingdom. In: E.L. Piza, and B.C. Welsh, eds. *The globalization of evidence-based policing: innovations in bridging the research-practice divide*. Abingdon: Routledge, 73–92.

Staley, K.W., 2014. *An introduction to the philosophy of science*. Cambridge: Cambridge University Press.

Stueber, K., 2011. The psychological basis of historical explanation: re-enactment, simulation and the fusion of horizons. In: D. Steel, and F. Guala, eds. *The philosophy of social science reader*. Abingdon: Routledge, 197–210.

Thornton, A., *et al.*, 2019. On the development and application of EMMIE: insights from the what works centre for crime reduction. *Policing and society*, 29 (3), 266–282. doi:10.1080/10439463.2018.1539483.

Tilley, N., 2009. Sherman vs Sherman: realism vs rhetoric. *Criminology & criminal justice*, 9 (2), 135–144. doi:10.1177/1748895809102549.

Torday, J.S., 2013. Evolutionary biology redux. *Perspectives in biology and medicine*, 56 (4), 455–484. doi:10.1353/pbm.2013.0038.

UK Ministry of Defence. 2018. *Global strategic trends: the future starts today*. Available from: Global Strategic trends - the future starts today publishing.service.gov.uk. [Accessed 8 November 2021].

US National Intelligence Council, . 2017. Global trends: paradox of progress [online]. Available from: GT-Full-Report.pdf (dni.gov). [Accessed 08 November 21].

Weisburd, D., and Neyroud, P., 2011. Police science: toward a new paradigm. *New perspectives in policing*, January, 1–23.

Welsh, B.C., 2019. Evidence-based policing for crime prevention. In: D. Weisburd, and A. A. Braga, eds. *Police innovation: contrasting perspectives*. Cambridge: Cambridge University Press, 439–456.

Williams, E., and Cockcroft, T., 2019. Knowledge wars: professionalisation, organisational justice and competing knowledge paradigms in British policing. In: R.J. Mitchell, and L. Huey, eds. *Evidence-based policing: An introduction*. Bristol: Policy Press, 131–142.

Wood, D., *et al.*, 2017. The importance of context and cognitive agency in developing police knowledge: going beyond the police science discourse. *The police journal*, 91 (2), 173–187. doi:10.1177/0032258X17696101.

Wortley, R., *et al.*, 2020a. What is crime science? In: R. Wortley, A. Sidebottom, N. Tilley, and G. Laycock, eds. *Routledge handbook of crime science*. London: Routledge, 1–30.

Wortley, R., *et al.*, 2020b. Future directions for crime science. In: R. Wortley, A. Sidebottom, N. Tilley, and G. Laycock, eds. *Routledge handbook of crime science*. London: Routledge, 447–455.