The London School of Economics and Political Science

The role of mass media and police communication in trust in the police: New approaches to the analysis of survey and media data.

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Declaration

I certify that the thesis I have presented for examination for the MPhil/PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

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Abstract

The thesis contributes to the literature on public opinion of and trust in the police. The theoretical framework is based on Tyler's procedural justice theory adapted to the British context. Procedural justice theory postulates that legitimacy and trust are largely based on perceptions of procedural fairness – believing that the police treat citizens with fairness and respect and that citizen's views are heard and taken into account. The focus of the thesis is on the role of the mass media and police communication in shaping such perceptions, public trust, and other related aspects of public opinion of the police.

The thesis contributes new empirical evidence of theoretical and practical significance with three empirical studies. The first study tests a series of hypotheses about media effects on public opinion. It combines a comprehensive content analysis of newspaper reporting on policing in five major British newspapers from 2007 to 2010 with public opinion data from a large-scale population representative survey fielded continuously over the same three-year period. The second study is a 'real-world' quasi-randomised experiment testing the impact of local police newsletters on public trust in the police in seven neighbourhoods in London. The third study examines the role of perceptions of information provision in public trust in the police more closely based on the survey data from the first study. The findings suggest that media and police messages about how the police conduct themselves towards individual citizens as well as towards the community at large have a bigger effect on public trust than messages about the effectiveness of the police in carrying out their duties. Overall, press reporting has a small effect on public trust in the police. Police communication can enhance public trust in the police and is important in particular for those who have least trust in the police.

Preface

The material presented here constitutes my PhD submission to the London School of Economics and Political Science. The Methodology Institute uses the 'papers based' thesis format in its PhD programme. The structure of the thesis is thus as follows. A series of four papers forms the core of the thesis. Because each of these papers is required to be able to stand on its own, each contains a literature review and a references section. The four separate papers are held together by an extended introduction and a conclusion chapter. The extended introduction describes the context and aims of the thesis, reviews the key concepts and theories that form the basis of the four papers and sketches out the overall narrative that connects them. The final chapter draws together the findings from the separate papers in a joint discussion and conclusion.

Two of the four papers are co-authored. I contributed 55% to the second paper (Chapter 3) and 80% to the third paper (Chapter 4).

Acknowledgements

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CHAPTER 1:   **INTRODUCTION**

Public trust and confidence is a central topic in policing. Widespread public trust in the police is important on moral and political grounds, contributes to compliance with the law, and is essential for effective policing. Much of policing depends on the public's willingness to cooperate – reporting crime, providing information and evidence, complying with police orders in stop-and-search situations, at major events, protests and crime scenes.

In Britain, such propositions gained currency when public trust in the police started to crumble in the 1980s. The until then high public support for the police continued to decline for over a decade, despite drastically falling crime rates from the mid-1990s onwards (Millie and Herrington 2005, Reiner 2010, Bradford 2011). The Home Office and police organisations reacted by introducing so-called 'reassurance policing' and 'neighbourhood policing' strategies aimed at regaining public trust. The Home Office even made 'confidence' – the terms trust and confidence are used interchangeably for now - the central police performance target in 2009[1]. Public trust in the police stabilised in the 2000s, yet remains fragmented. Rifts between the police and parts of the public manifested themselves forcefully in the recent riots and looting in London, sparked by outrage over a young black man being shot by police officers in Tottenham.

How does such loss in confidence happen? And, given its importance, what can the police do to regain public trust? With these questions arises the need to

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[1] The Metropolitan Police London and other police forces have retained public confidence as a central performance target even after the new coalition government changed this the following year.

better understand the concept of public trust in the police, and the factors that underpin and influence it. This thesis focuses on the role of the media and police information provision as one of the factors thought to shape such public opinions of and trust in the police. How does information – from the press and directly from the police – affect public trust?

The media are widely assumed to exert a strong influence on public opinion. This common notion does not seem unfounded given that the media are the main source of information about the police for the vast majority of the British population (85% according to the British Crime Survey 2009/10). Less than 30% come into direct contact with police (ibid.). The widespread belief that the media are shaping public opinion has grown powerful enough for media reporting to have a much more direct effect on police politics and crime policy. Politicians, high ranking police officers and policy makers often respond directly to the media, in particular the press, as if to pre-empt the anticipated response of the public. The resignation of the last two commissioners of the Metropolitan Police London, Sir Ian Blair and Paul Stephenson, are good examples. Ian Blair had to resign as a result of "trial by media" (Greer and McLaughlin 2011: 23). Paul Stephenson's resignation in the wake of the phone hacking scandal at the News of The World and emerging evidence of corruption and incompetent handling of this case within the Metropolitan Police London followed so swiftly upon press reporting that there would not even have been time for the public to press for his resignation.

The introduction of designated public relations (PR) departments in police organisations and police forces across England and Wales is further testament to the assumed media effect on public opinion. The main motivation and purpose of these PR departments is to manage the relationship with the media professionally. Increasingly, another task of such public relations departments is direct communication with the public. Cynical voices, particularly within police ranks, belittle this as a 'David against Goliath' attempt at improving police image, suspecting that any such efforts on the part of the police are

bound to be dwarfed by the omnipresence and persuasiveness of the mass media. Others have suggested that information provision should be a key element of reassurance policing and is effective in enhancing public trust in the police (Chapman et al. 2002, Salisbury 2004, Singer and Cooper 2008). This resonates with empirical research that shows information provision through deliberative polls can be instrumental in changing attitudes towards the courts and sentencing (Roberts and Hough 2005). Still others agree that the lack of public knowledge is, in part, to blame for too little public support for the police and the criminal justice system at large, yet doubt the effectiveness of information provision as an antidote (Feilzer 2009). Feilzer (ibid.) questions the deliberative poll findings of Roberts and Hough (2005), suggesting the observed effect is due to better measurement of public opinion rather than actual opinion change. Her own empirical study finds no measureable effect of a weekly newspaper column on crime and justice on public opinion. Feilzer concludes that the public is decidedly uninterested in facts about the criminal justice system and more interested in reading a "good story".

Empirical studies to support such claims are surprisingly few. Media studies in criminology have largely focussed on the effect of watching violent television on aggressive and criminal behaviour (particularly amongst children) (Gauntlett 2001). Studies on the effect of media reporting on public opinions and trust in the police are rare. There are even fewer empirical studies investigating the effect of information directly from police on public trust in the police.

In sum, we know very little about how information provision – through the media and directly from the police – impacts on trust in the police. One reason is that criminologists have not yet made full use of the methodological possibilities. This is a PhD in Social Research Methods, and thus the way it is aiming to make a contribution to the literature is through the empirical method. It uses a variety of methodological approaches to address some of the questions on the role of mass media and police communication in trust in the police

empirically. These include a regression analysis that integrates a content analysis of press reporting into survey data, a quasi-randomised 'real world' experiment, and quantile regression. These methods allow addressing questions about 'media effects' and the effectiveness of police information provision in a fairly robust way, and warrant a number of theoretically and practically relevant conclusions.

Focusing on the press, the first study probes the common notion that the media are powerful in shaping public opinions of and trust in the police (paper 1). Using the example of local police newsletters, the second study seeks to address the question of whether police communication with the aim of enhancing public trust in the police is an effort in vain, or can indeed be an effective element of neighbourhood policing strategies (paper 2 and paper 3). The third study examines more closely how perceptions of police information provision affect public trust in the police (paper 4).

All three studies draw on systematic social survey data collected by the market research company bmg on behalf of the Metropolitan Police Service London (MPS). The second study, the newsletter experiment, was conducted in collaboration with the MPS. In the role of a research advisor my contribution to the study included the formulation of the research hypotheses based on theory, the design of the experiment, the statistical analysis, and the writing up of the study a research report to the MPS. I was also involved in selection of the seven wards included in the Safer Neighbourhoods. Which of the seven wards would be test and control sites was effectively decided by practical constraints. MPS research analysts were responsible for the implementation of the experiment, which involved liaising with the local Safer Neighbourhoods teams in writing the newsletters and ensuring the experimental conditions were met, and liaising with the company contracted to disseminate the newsletter on the agreed date. The two published articles that form Chapters 3 and 4 of the thesis derive from

my (single-authored) research report to the MPS. Both articles are co-authored[2] with the contribution to writing as stated in the preface.

The scope of three empirical studies is naturally limited. All survey data used in this thesis come from either the Public Attitudes Survey or the Safer Neighbourhoods Survey of the Metropolitan Police London. These surveys are large and population-representative, yet only of London. The analysis of media data, whilst equally large scale and comprehensive (9,500 articles from five major London newspapers published in the course of three years in the first study, and about 300 articles published in the twelve major London newspapers within the space of a week in the second study), is limited to the analysis of press reporting and does not include television, cinema, blogs, magazines, or fictional newspaper contents. Only one form of police information provision was studied empirically: local police newsletters tested in seven neighbourhoods in London. Within these limits, the thesis makes a number of contributions to the literature.

The findings suggest that the press are not as influential as commonly assumed, and that police communication through local newsletters can have a positive effect on public trust in the police. Of theoretical significance is what the findings reveal about the kind of messages – from the press or directly from police – that do and do not seem to have an effect on public trust. It is the messages the press or the police send about how the police act towards individuals as well as towards the community – whether the police appear to care about their concerns, take action in response to them, treat citizens with fairness and respect, and show themselves accountable – that seem to inform opinions of and trust in the police. Yet, newspaper articles that provide information of this kind are rare, seemingly too rare to have a substantial impact of public trust in the police. The staple of press reporting on the police is

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[2] The co-author Elisabeth A. Stanko had an oversight role as the Head of the Strategy, Research and Analysis Unit at the MPS. Daniela Wünsch had the lead in the research team that implemented the newsletter experiment and led the focus group research that contributed to the development of the „good practice model" of police communication described in Chapter 4. Ben Bradford contributed to the writing of the article in Chapter 3, but was not involved at previous stages of the research.

reporting on on-going crime investigations and does not have a significant effect on public trust. Media and police messages about the effectiveness of the police in carrying out their duties affect public trust in the police only to a small extent. These findings support theories that suggest public trust in the police is not so much based on police performance and 'outcomes', but more on perceptions of how the police conduct themselves towards individuals– using their police powers ethically and treating citizens with fairness and respect, and towards the community at large – engaging and dealing with the crime and disorder concerns of the community (Tyler 2006a, 2006b, Tyler and Huo 2002, Lind and Tyler 1988, Sunshine and Tyler 2003).

On a more practical level, the findings have implications for police strategies aimed at enhancing public trust in the police. They suggest that communication is at the heart of the relationship between the public and the police, and that information provision can be effective as part of a wider neighbourhood policing approach. The findings from the second study show that even one-off local police newsletters can have a positive effect. The results from the third study indicate that perceptions of police information provision are particularly important for those with low levels of trust, because not feeling informed about what the police are doing locally has a particularly detrimental effect on public trust amongst this group.

The theoretical framework of the thesis

Each of the four papers that form the core of the thesis includes a review of the literature directly relevant to the facet of the media/police communication–trust relationship that the particular paper is addressing. I shall thus largely sideline the literature on media effects and information provision in this introduction. The following sections define the key concepts and theories of trust that provide the general theoretical framework of the thesis, and briefly sketch out the wider context of the discussions in the literature on public trust in the police.

Theories of trust

Writings on trust seem to revolve around three questions and definitions of trust depend on which of them is of primary concern: characteristics of a social relationship that mark the presence or necessity of trust, the function of trust in social systems, and trustworthiness – characteristics of a person or institution that make us trust them, and them deserving of our trust.

That trust is embedded in every social relationship is little contested, and most authors mention it (Luhmann 1979, Barber 1983, Fukuyama 1996, Hardin 2002). Misztal (1996: 14) calls trust a "public good", a form of social capital, a dimension of the social structure. Tilly (2005: xii) sees trust as "a property of interpersonal relations in which people [take] risks of each other's failure or betrayal". If trust isn't broken, taking this risk is beneficial for all parties involved. This becomes apparent when we look at the functions of trust. On a mundane level, trust functions as a facilitator for favours and exchanges, an enabler of and lubricant for social relationships. You lend a book to a friend trusting he will return it in good condition. This benefits your friend because he can use the book, and it benefits you in the long run since your friend might do you a favour in return. Building trust on the micro-level also helps to strengthen trust on the macro-level (Luhmann 1979, Misztal 1996). A positive interaction with a doctor can strengthen trust in the medical system as a whole, a negative encounter with a police officer might not only damage the trust relationship with this particular officer, but trust in the police as an organisation

(see also Tyler and Huo 2002). Money-based economies are entirely dependent on its participant trusting in the value of its money, expecting a 10 Pound note not being just worth the paper it is printed on. Economies collapse when people lose trust in the value of its currency, for example during the extreme inflation (hyperinflation) in 1922 in Germany or in Greece towards the end of World War II.

A little more abstract but equally essential is the complexity reducing function of trust described by Luhmann (1979). Approaching the subject from this angle, Luhmann believes that trust is a "necessity", a "basic fact of social life" (ibid.:.4). Without trust, understood as a "a sense of confidence in one's expectations" (ibid.: 4), the complexity of the world would be limitless, anything possible, too overwhelming und too unpredictable to lead a normal daily life as we know it. This is akin to Barber's (1983) description of the general meaning of trust, the expectation of the continuation and fulfilment of the natural and social order. In this view of trust, the concept is future-oriented and closely tied to those of risk and uncertainty. In this context, Luhmann (1988) introduces a distinction between trust and confidence. Trust is something you *chose* to place in a situation of *risk*. You chose to trust a car-dealer and buy from him, a babysitter and leave your child in their hands, or you can chose not to. Confidence, in contrast, is something we place in situations of *uncertainty*. Luhmann gives the example of having confidence that cars will not leave the road and hit you. Confidence understood in this way is habitual, a situation where one does not even perceive or consider a real possibility of alternatives. Luhmann argues further that the difference between confidence and trust situation is also apparent in the response to disappointment when events do not unfold as expected. In the case of confidence, the reaction is *external attribution* – you had no control over the situation in the first place. In a trust situation, the reaction it is *internal attribution* – you made a mistake in trusting and probably regret not having chosen differently. I shall return to this distinction between trust and confidence later in the context of policing.

Let us first consider the third type of question and way of defining trust – characteristics of persons or institutions that signify trustworthiness. Hardin (2002) says the explanation for trust is simply the trustworthiness of the other, the explanation for distrust is that the other does not seem trustworthy: "trust is little more than knowledge; trustworthiness is a motivation or a set of motivations for acting" (ibid.: p.31). According to Hardin, trust is granted on the basis of the motives of the trusted – we trust because we believe that the trustee's interests encapsulate our own, if only in the sense that the other has an interest in our relationship to continue and thus will not betray the trust we place in them. Barber's (1983) idea of trust based on the motives of the other has a somewhat different meaning. For Barber, trust based on the expectation that the trustee has the right motives and intentions means we believe that the other will place our interests above their own. These are not narrowly instrumental as Hardin understands them, but normative in nature – not betraying trust because it is the 'right thing to do', rather than because it is in one's self-interest to ensure the relationship continues. Barber calls this trust as fiduciary obligation and fiduciary responsibility. Trust understood in this way, Barber suggests, is a social mechanism that enables an effective and just use of power.

Barber formulates a second expectation or criteria of trustworthiness, technical competence. Technical competence is the ability to fulfil what one has been trusted to do in a very practical sense. For example, trusting a taxi driver that he will know the route and drive safely, or trusting a doctor that he will be able to correctly diagnose and adequately treat an illness.[3] Finally, a further criterion for assessing the trustworthiness of the other is on the basis of similarity in values and norms. Fukuyama (1996: 153) describes trust as arising "when a community shares a set of moral values in such a way as to create expectations of regular and honest behaviour". We trust when we perceive similarity or solidarity in values and norms (see also Earle 2010, Siegrist 2010, Stoutland 2001).

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[3] Sometimes the above mentioned general expectation of the continuation and fulfilment of the natural order is considered a third element in Barber's conceptualisation of trust.

What of this is important when it comes to explaining public trust in the police? Firstly, the nature of the relationship between the police and the public arguably renders public trust necessary for the legitimation of police power. 'Policing by consent' and the use of force as a last resource are premised on the public perceiving the police as a legitimate authority and trusting police officers to act righteously, fairly, and with their best interests at heart (Reiner 2010, Tyler 2006). Beetham (1991) formulates three dimensions of the legitimacy of power, one of which is expressed consent. To be trusting of the police is an indication of consent to the way the police are using their powers. Distrust on the other hand puts a question mark on the legitimacy of the police.[4] Secondly, trust is of practical importance for public support of, deference to and cooperation with police, willingness to accept decisions of police officers and possibly even, at least in part, explain why people obey the law (Lind and Tyler 1988, Tyler and Huo 2002, Sunshine and Tyler 2003, Tyler 2006a, 2006b). Tyler and colleagues argue that trust and legitimacy are important because perceiving the police as trustworthy and their power as legitimate leads people to feeling obligated to voluntarily defer to the police. When authorities are perceived to be entitled to be obeyed people are more willing to accept police decisions and follow police orders because they feel it is 'the right thing to do' rather than out of fear of coercive force. In this way trust and legitimacy are necessary for authority to function: without it, exerting influence over people is costly in resources, difficult, and not very effective.

Much more powerful than instrumental – based on fear of sanction –compliance is normative compliance - deferring to police because of the belief that it is the right thing to do and that police deserve to be obeyed. Citing Freud, Durkheim, and Weber, Tyler (2006) suggests that social norms and values become internalised in such a way that external control gets replaced by self-regulation, feeling obliged to obey the law and comply with police decisions then comes from within. Tyler and Huo (2002) provide empirical evidence that underlines

[4] The other dimensions of the legitimacy of power according to Beetham (1991) are that power has to conform to established rules (for example the law), and the moral justifiability of these rules in that they need to be based on shared beliefs, values and norms.

this argument. Their data from various surveys in the United States give strong support in favour of the normative rather than the instrumental model of cooperation and compliance.

Trust thus has an important function in the relationship between the public and the police. It is necessary to secure cooperation and compliance that is based on perceiving police authority as legitimate and entitled to be obeyed. Not only do police require the public to trust them in order to enforce the law legitimately and effectively, the public also needs to have trust in the police in order to benefit from having a police service. A public that does not trust the police is unlikely to call on the police when they are personally in need for protection or seek justice for a crime that has happened to them, and the community will be unlikely to rely on police to defend its norms, values and social order.

This leads to the third question: what makes police trustworthy? Tyler and colleagues (Lind and Tyler 1988, Tyler and Huo 2002, Sunshine and Tyler 2003, Tyler 2006a, 2006b) suggest that perceptions of moral alignment between the community and police, procedural fairness, and beliefs about the motives of police are central in public assessments of the trustworthiness of the police. People perceive a sense of moral alignment between the community and the police if they can identify with the goals and values the police represent and demonstrate through their actions. When police are seen to reflect and defend the community's values and norms and in this way show solidarity with the group it nurtures trust and creates a connection between the community and the police. Assessments of the trustworthiness of the police are based on how police officers go about carrying out their duties. Treating people with fairness, dignity and respect, taking their views into account and caring about their concerns are important signs of trustworthiness. A police officer that treats you disrespectfully, appears to discriminate against you because of your ethnicity, gender or some other reason, does not seem to follow due procedure, does not listen to your account, or appears to not take your concerns seriously is unlikely to instil trust. Tyler and colleagues (ibid.) marshal ample empirical evidence to

support their procedural justice theory and show that such procedural fairness is linked to public trust and police legitimacy, and by extension, willingness to accept police decisions, cooperate with police and comply with the law. Both moral alignment and perceptions of procedural fairness are linked to what Tyler and colleagues label 'motive-based trust'.

Tyler and Huo (2002) define motive-based trust as trust that is based on beliefs about the motives and intentions of the other. The authors distinguish this from instrumental trust which is trust based on knowledge of the other's past behaviour and what they say they will do. This notion of motive-based trust differs from Hardin's (2002) definition of trust as encapsulated interest in that encapsulated interest means predictability based on the expectation that it is in the other's self-interest to show themselves trustworthy enough not to jeopardise a relationship that is beneficial for them.

The problem with motives and intentions is that they are not directly observable. We have to infer them from how people act, how they explain their actions, and by using our general social knowledge. Here, procedural fairness enters the picture again. Tyler (ibid.) suggests that citizens infer the motives of police from how police officers conduct themselves – in particular whether they treat you with fairness and respect is revealing of their motives and intentions. Tyler's notion of motive-based trust is akin to Barber's (1983) meaning of trust as fiduciary obligation and responsibility. Central to this is the belief that the other has the right intentions and will not act selfishly. A trustworthy person will consider it their duty to put the interests of those who trust in them before their own and will acts with the others' concerns and interests at heart. Barber's trust as technical competence means the police can be trusted not only if they are willing, but also if they are able to deliver what they promise. This alludes to the effectiveness of the police in preventing and detecting crime, protecting citizens and property, and keeping peace and order.

The measurement of trust

How, then, do we measure such trust? Both single indicators and scales comprising several survey items exist. Measurement by a single item is inferior to multi-item scales because only the latter allow identifying and dealing with measurement error in the statistical analysis. In particular, a complex concept like trust might not be sufficiently narrow and unambiguous to be captured by any one single survey question. In practice, single indicators prevail. The Home Office and the Metropolitan Police London use the question "how good a job are the police doing in your local area" to track public trust, it is the standard measure of public confidence in the British Crime Survey (BCS) and the Public Attitudes Survey by the Metropolitan Police London (METPAS). In 2008 the British government declared in a Public Service Agreement (PSA 23) the question of how well the "police and the local council are dealing with anti-social behaviour and crime issues that matter in this area" the central police performance target[5]. Jackson and Bradford (2010) show that these two questions are comparable as well as highly enough correlated with multi-item scale measurements of confidence (see also Tyler and Fagan 2008). In short, it appears that these single item questions are reasonable ways of measuring overall trust and confidence in the police.

In this thesis, the standard BCS and METPAS question 'how good a job are the police doing' will be used alongside the so-called MPS confidence model. The MPS confidence model emerged empirically out of a pool of survey items the METPAS fields. These items are intended to cover a broad range of aspects of public opinions of and trust in the police. These survey items partly derive from Tyler's procedural justice theory and are partly inspired by British sociological writings on policing. Whilst the individual items were developed based on theory, the grouping of these into the three components that define the MPS confidence model itself developed empirically through principal component analysis and confirmatory factor analysis. The MPS confidence model consists of three components: perceptions of police fairness, perceptions of police

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[5] The coalition government scrapped public confidence as a performance target in 2011.

community engagement and perceptions of police effectiveness. These three components are found to correlate with each other and with overall summary measures of trust, yet they are distinct concepts with different antecedents (Stanko and Bradford 2009, Hohl et al. 2010, Bradford and Jackson 2010, Bradford et al. 2009, Jackson et al. 2009, Jackson and Bradford 2010). Detailed accounts of the survey questions that are used to measure these concepts will be given in each of the four papers. What is missing is a theoretical justification for the MPS confidence model that works so well in practice.

Trust in this thesis – 'the confidence model'

In this thesis, trust is understood as trust based on beliefs about the motives and intentions of the police and expectations of fiduciary responsibility, thus heavily leaning on Barber (1983) and Tyler (Tyler 2006a, 2006b, Tyler and Huo 2002, Lind and Tyler 1988, Sunshine and Tyler 2003). Public assessments of the trustworthiness of the police are considered to be based on three main components: (a) judgements of the police treating people equally, with fairness and respect in direct encounters; (b) judgments of police competence (effectiveness) in dealing with crime, maintaining order, and responding to emergencies; (c) judgements of police engagement with the needs and concerns of the community and expectations of the police to represent and defend the society's shared values and norms.

The first component of assessments of police trustworthiness, perceptions of procedural fairness, follows Tyler's procedural justice theory. As outlined, Tyler and colleagues (ibid.) argue that motives and intentions are not directly observable, and suggest that they are inferred from how the police treat people in direct encounters. In particular, what matters is whether police officers treat citizens with fairness, dignity and respect, and listen to their concerns and take these into account when making decisions. Leaning on Barber (1983), technical competence understood as police effectiveness in carrying out their duties forms the second component of police trustworthiness. Concurring with Tyler's argument and empirical evidence, this component is thought to carry less weight in people's assessments of the trustworthiness of police. These two

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components entail the essence of the definitions of trust and theories of trustworthiness which I have argued to be relevant for the relationship between the public and the police.

In the British context people infer the trustworthiness of the police not only from how they treat individuals in direct encounters, but also from their perceptions of community engagement. The British public form beliefs about the motives and intentions of the police and assess whether the police share and defend the community's values and norms from how they act towards the community as a whole. By community engagement I mean whether the police appear to be interacting with, listening to and responding to the disorder and crime concerns of the local community. In the British context, the strong links between the police and the community are of particular importance as they are closely connected to the symbolic and cultural meaning of the police, and by extension, the expectations that the British public has of the police (Loader and Mulcahy 2003, Reiner 2010, Garland 2001, Girling et al. 2001, Jackson and Bradford 2010).

Condensed into the image of the police are a range of public sensibilities about British national identity and the state of society (Loader and Mulcahy 2003). Girling et al. (2000) describe the British 'bobby' as both a symbol of a romanticised past of social cohesion and order as well as a symbol of the fractured and troubled present. Not seeing the familiar face of the bobby that comes from and is part of the local community becomes linked to concerns about the erosion of social norms and all the anxieties that attached to the feeling that things are not the way they used to be. This partly resonates with Sunshine and Tyler's (2003) account of motive-based trust and the argument that moral alignment between the police and the public are central to public support of the police, but it goes further than this mostly socio-psychological argument. It requires understanding what the police are in Britain and to the British public.

Who, or what, are the police?

At its core, the police are a state organisation put in place to help maintain social order. The police as an organisation is distinct from policing. Policing is a facet of social control that involves a whole range of social mechanisms directed at the reproduction of social order. Most societies did not have a police organisation, and their contribution to crime control and social order is debatable (Reiner 2010). Social order requires policing, but not a police. Reiner (ibid.) suggests that what is special about the police is the combination of surveillance and the threat of sanction if deviance is discovered, backed up by the power to use legitimate force to achieve this.

If the police were a fairly recent invention – in Britain police was only established in 1829 – and the police is not necessary to keep social order intact, perhaps not even very effective at it, how did we come to accept that the police have legitimacy? Why do most of us, most of the time, defer to police and consider them entitled to use force against us if we break the rules of our society? How did the British bobby become the symbol of British national identity, and the condenser of societal sensibilities and anxieties that Mulcahy and Loader (2003) say he (still) is today?

Reiner (2010) argues that police legitimacy is not a resource that is just there, it had to be created and earned. In Britain this was achieved by making the police subject to the rule of law and accountable to the courts, the principle of minimal force and policing by consent, the emphasis on the police being a service for the public, appearing effective in controlling crime - and by remaining apolitical. In this way the police could come to be seen as closer to the public than to politicians, to have this 'mythical' connection with and closeness to the concerns of the public that these will most likely never have. All of this contributed to establishing the trustworthiness of the police, and by extension, contributed to the legitimation of their role and their powers.

Social and economic change, beliefs about the causes of crime and crime control first helped the creation of the reputation of the police and nurtured an image of the British bobby that connected him closely to its community. Two decades later this very societal change pulled on at least on one corner of the rug from under the stylised British bobby's feet. Loader and Mulcahy (2001a, 2001b) describe how the police have come to have the 'power of legitimate naming', in particular in the period from 1972 to 1986. The police, being respected yet until then largely invisible in the media –a 'silent service' - had become social commentators in the press. Police chiefs were seen as competent to diagnose the causes of rising crime and social problems with professional expertise and judgement. Implied in this, Loader and Mulcahy argue, is a view that there is an almost mystical, intimate connection between the police and the public which meant the police were trusted to speak and act in the communities' best interest.

Police authority and police legitimacy, Loader and Mulcahy (2001, 2001b) suggest, in part also depend on the societal climate, and the predominant values and norms of the time. Between 1945 and 1965 respect for authority in general enabled the police to have a relatively unquestioned role. Romanticised memories and notions of social order and tranquillity are a legacy of this period, the British bobby on the beat being both part and symbol of it. The increase in crime and perceived moral breakdown that followed helped the police to become the social commentators, the rock that people looked to for reassurance. Yet, the police could not reverse this social trend and ultimately were pulled under by the wave that had swept them onto the public stage (Loader and Mulcahy 2003).

Hough (2007) and Reiner (1992, 2010) attribute the crumbling public support for the police that began in the 1980s and resulted in the 'reassurance gap' of the 1990s, at least in part, to this long-term social trend. In addition they argue that the legitimacy crisis of the police was also a result of the police scandals of the 1980s which showed the police as abusing their power and perceiving

themselves as above the law: corruption, the use of excessive force and racial discrimination. This, Hough and Reiner argue, together with general public sector reform that brought on the reign of managerialism, took the sacred from the police.

Reiner (2010) observes that today the police seem to be both sacred and fragmented, and that police legitimacy needs to be re-negotiated case by case. It is in this context that it is important to note that terms like 'public trust' and 'public opinion' are somewhat misleading, in that they suggest that there exists something like a uniform public opinion. The British public includes many publics, with differences in values and norms, and differences in their experience of police and trust in them. Whilst in Britain ethnicity by no means divides the public as much as it does in the United States, the experience of police contact differs. Levels of public support for the police are lower amongst Black citizens compared to citizens with other ethnic origins, albeit attitudes towards the police seem to be converging between socio-demographic groups in recent years (Bradford 2011). This diversity within the British public and the fragmentation and tentativeness of public noted by Reiner (2000, 2010) co-exist with what Loader and Mulcahy (2003) describe as 'reservoirs' of public support for the police, in particular amongst the White middle-aged population in the more rural parts of England. The notion of shared values between the police and the public persists particularly in these groups. The police are still likely to be seen as closer to the public than politicians, and looked at to defend and represent the values and norms that hold the British society together. It is against this background that in the British context perceptions of police community engagement are a central component of public trust in the police.

Returning to the definition and theory of trust on which this thesis is based, perceptions of police community engagement thus form the third of the three components of trust. In sum, trust is thought to be based on beliefs about the motives and intentions of the police and expectations of fiduciary responsibility. The trustworthiness of police is understood to depend on

perceptions of procedural fairness, perceptions of community engagement and perceptions of police effectiveness. These propositions form the 'confidence model'. Whilst this label is a little misleading – 'components of trust' would be a more adequate choice of name - it is retained to give adequate acknowledgement to the MPS confidence model which, through its empirical persuasiveness, inspired the theoretical conceptualisation.

A note on confidence
In British criminology, 'public confidence in policing' has become a short-hand for trust and confidence. The terms are often used interchangeably. Whilst the former is more adequate to the concept, the latter is used by the Home Office, police organisations and the government. Trust, as we have seen, is based on the motives, intentions or encapsulated interests of the other. Confidence in contrast is based on past performance, the expectation that things continue as they were, is more related to uncertainty than to risk, habitual and instrumental (Luhmann 1979, Earle 2010, Siegrist 2010). We have confidence that the sun will rise tomorrow and that fellow pedestrians won't suddenly attack us; we trust teachers, doctors and dry cleaners.

In the context of policing, Bradford and Jackson (2010), drawing on Roberts and Hough (2005), suggest 'trust' refers to the expectation that one would personally be treated fairly and effectively in a direct encounter with a police officers, and 'confidence' refers to the belief that the police as an institution is fair and effective. Sometimes the term confidence is used to refer to the single item survey question that is the standard summary indicator of public trust in and support for police, the 'how good a job are the police doing in your local area' question. Measures of trust in that context then refer to the (usually) multi-item indicators for components of trust, for example, police effectiveness or procedural fairness. Such attempts of defining trust and confidence clearly and separately have not been taken up by the field, and the terms trust and confidence continue to be used interchangeably. In this thesis, the term confidence is used to refer to the standard overall survey measure of trust in the police, the 'how good a job are the police doing in your local area?' question.

The term trust is understood as defined above. An exception is paper one (chapter two). Because this paper is a chapter in Jackson et al. (*forthcoming*) it follows their definition of terms which differs somewhat, however not fundamentally from the rest of the thesis.

What shapes public trust in the police?

A number of factors that shape public trust in the police have been identified in the literature. Direct contact with police officers appears to have the strongest influence on trust. Unsatisfactory police contact has a strong negative impact on trust in the police, whilst satisfactory contact only has a small confidence-enhancing effect (Fitzgerald et al. 2002, Skogan 2006, Tyler and Huo 2002, Bradford et al. 2009). One explanation for this asymmetry might be that the expectations and opinions people bring to the encounter shape how the encounter is subsequently perceived: a positive encounter may not result in improved opinions of the police because either this was expected (by those who already had positive opinions of police) or are dismissed as a one-off exception by those who had pre-existing negative views of the police (Skogan 2006, Reisig and Chandek 2001).

Yet, the vast majority of the population do not come into regular contact with the police. Less than 30% of the respondents in the British Crime Survey say they had contact with police within the past 12 months (British Crime Survey 2009/10). What is the basis for their trust, and what shapes their attitudes and expectations of the police?

Research has shown that vicarious experience – hearing from family members, neighbours and friends who had direct contact with police - has a similarly strong effect on trust in the police as direct encounters with a police officer (Rosenbaum et al. 2005). Visibility of police foot patrols (and to a much lower extent vehicle patrols) has been found to enhance public trust in the police (Tuffin et al. 2006). Furthermore, how well the police are dealing with crime and disorder appears to be, at least in part, inferred from the health and strength of social bonds and community regulation (social cohesion and

collective efficacy). When informal control processes function well, the police appear highly effective in controlling crime and disorder. In turn, when social bonds and informal social control are breaking down, the police receive part of the blame (Loader 1996, Garland 2001, Girling et al. 2000, Jackson and Sunshine 2007). In short, "the police will appear more successful the less they are actually needed" (Reiner 2000: xi).

The omnipresence, wide reach and persuasiveness of the mass media render the media a regular candidate in discussions about factors that shape public opinion of the police (Manning 2003, Garland 2001, Reiner 2010). Yet, as noted earlier, there are surprisingly few studies that probe this notion empirically. One reason is that 'media effects' are notoriously difficult to research, and as mentioned earlier, criminologists have not yet made full use of the methodological possibilities to address such research questions. More generally, little is known about how information – not only from the media, but also directly from police or other sources - impacts on public trust. Yet, direct police communication has become part of policing strategies aimed at 'reassuring' the public and regaining trust. The Home Office made efforts to close the 'reassurance gap' – falling confidence despite falling crime rates – with information materials aimed at educating the public about 'true' crime rates (Duffy et al. 2008, Quinton and Tuffin 2007). Falling levels of confidence were attributed to a public lack of knowledge and widespread false beliefs about crime trends, and falling confidence linked to 'irrationally inflated' fear of crime – the latter commonly being blamed on the media (Singer and Cooper 2008, Chapman et al. 2002, Salisbury 2004). In more recent years, the focus has shifted away from 'correcting' public perceptions of crime towards the use of information provision as part of neighbourhood policing strategies. Here, information provision is used as a way of engaging with the local community (Innes 2007, Wünsch and Hohl 2009). Whether such information provision can be successful in enhancing public trust in the police is unclear.

The narrative of the thesis

Against this background, this thesis explores the role of the mass media and police information provision in public trust in the police. It does so within the framework of the confidence model– procedural justice theory adapted to the British context - , and uses a variety of methodological approaches and data that have not been used in this area of research before.

The substantive scope of the thesis is quite narrowly defined by its focus on the application of the confidence model to the explanation of how information – both from the media and the police – affects public trust in the police. Its substantive contribution constitutes of (i) being the first series of empirical studies that tests the confidence model in this context, (ii) the explanation the confidence model offers as to why some messages from the press or the police may have an effect on public trust in the police while others don't, and (iii) conclusions about the confidence model that can be drawn from these findings. A PhD thesis in Social Research Methods, breadth and depth come from the methodological contribution of the thesis. All three studies produce original empirical evidence with methods and data that have not yet been used in this area of research. The randomised experiment is perhaps the oldest research design and the methodological 'gold standard' in scientific research, yet has not been applied in the context of the research questions that motivate this thesis. The two elements of the media study – content analysis of newspaper articles and regression analysis – are well established, yet are novel in the combination, certainly within this area of research. A particular methodological contribution comes from the introduction of quantile regression to the field (Chapter 5).

The thesis consists of four papers. The four papers were selected as to cover two main sources of information about the police that are frequently assumed (the media) or hoped (police newsletters) to influence public trust in the police, and to include a variety of methodological approaches. Paper one (to be published as a book chapter) reviews the literature on the role of the media in shaping public opinions of the police and then proceeds to an analysis that relates press

reporting on the police in five major newspapers from 2007 to 2010 to survey data that measured public opinions of and trust in the police continuously over the same period of time. Based on this data the study tests a series of hypotheses that derive from the confidence model. The study finds little effect of press reporting on public trust in the police. Whilst there was great variability in press reporting over the three year period – including major police scandals – public trust remained very stable. As predicted by the confidence model, reporting on police community engagement and messages about procedural fairness had some effect on public trust. However, reporting of such kind is rare, seemingly too rare to have a substantial effect on public trust. The main focus of media reporting is on other issues, on ongoing crime investigations, and such reporting is not found to have a clear effect on public trust in the police. This finding has important practical implications for the police. It suggests that media stories about the police do not change public perceptions of the police as is often assumed. It also means that if the police want to communicate community engagement and procedural fairness to the wider public, they need to do it themselves as this does not appear to have sufficient news value to the national press.

Papers 2 and 3 report the findings from a quasi-randomised experiment that tested the effect of such direct police communication with the public. The experiment tested the effect of police newsletters on public opinion in seven neighbourhoods in London. These newsletters were designed to communicate engagement with the local community by reporting on local crime and disorder concerns, what the police had done to address them and the outcome of their actions. Paper two and three partly overlap as they draw on the same study and complement each other as they differ in focus. Paper two (published in the *British Journal of Criminology*) gives a more detailed account of the empirical study and explains on the theoretical underpinnings and implications of the study. The third paper (published in *Policing*) focuses on the practical implementation and implications of the findings by advancing a 'good practice model' of police communication.

The fourth and final paper complements to two preceding papers by examining the role of perceptions of police information provision in public trust beyond high-level 'average' effects. Whilst perceptions of police information provision are largely uncorrelated with levels of trust in the most trusting citizens, perceptions of police information provision (or a lack thereof) are closely connected to low levels of trust in those who are least trusting of the police. This means that not only do citizens who do feel uninformed about what the police are doing locally tend to have lower levels of trust, but also that they are also more strongly affected by the perceived lack of information. This paper also shifts from the primarily substantive focus of the first three papers to a specific methodological concern. It examines some of the limitations and fallacies of the routine use of standard linear regression, and shows how another statistical method, quantile regression, allows criminologists to address a broader range of research questions and to draw more nuanced conclusions.

The conclusion chapter draws together the findings from the four papers. It examines how well the confidence model fared in explaining how information from the media and directly from police does affect – or not - public trust in the police. It then proceeds to discuss in more detail what has been learned about the role of the media and police information in public trust. The methodological contribution of thesis is reviewed, and the limitations of the thesis are outlined together with proposals about future research directions. In this context, it concludes with some reflections on the characterisations of the public that are implied in different approaches to police information provision.

CHAPTER 2:

THE ROLE OF THE MEDIA

Hohl, K. (*forthcoming*). **The role of the mass media in public trust in the police**. In: Jackson, J., Bradford, B., Stanko, E. and Hohl, K. *Just Authority? Public Trust and Police Legitimacy*. London: Routledge.

1. Introduction

The media frame, reinforce and undermine how the public sees the police, it is often speculated. Fictional and reality TV formats frequently elevate police to a super-hero status (Reiner et al. 2000). The media also expose police brutality, racism, corruption and blunders in crime investigations and thereby undermine public confidence in the police (Manning 2003, Garland 2001). In this way, the media have the power to shape the relationship between the public and the police. This belief motivates police services to engage in 'image work' in an attempt to 'police images', to use Mawby's (2002) terminology. Over the past thirty years the police have created organisational structures to 'manage' the media and public relations professionally. A fair amount of academic literature explores the police – media relationship (Chibnall 1977; Mawby 2002, 2010; Leishman and Mason 2003) and the media portrayals of the police it has produced (Reiner 1997; Reiner et al.2000, 2001; Beckett 1997). Media images certainly have political importance and 'trial by media', as Greer and McLaughlin (2011) phrase it, influences police politics and crime policy (Reiner 2010, Garland 2001, Cavender 2004).

For many, the persuasiveness and the wide reach of the mass media, in particular of television, appears reason enough to take at face value the notion that the media have the power to heighten public fear of crime and create false beliefs about an increasingly cruel and criminal world. Watching violent

television programmes is sometimes also thought to lead to aggressive behaviour. Garland (2001) suggests that the media may have not created fear and interest in crime, but that they cultivate, nurture and 'institutionalise' the experience of crime, make crime more salient in everyday life and reduce individuals' psychological and emotional distance from it. Public response to crime is not actually a response to crime, Garland argues, but to the representations of crime and crime control shaped by the media. The media seem to bolster the myth of an effective police that can control crime, and at the same time weaken public confidence by the constant scrutiny of police activities and exposure of blunders and police misconduct (Manning 2003). Indeed, the media are the main source of information about the police for the vast majority of the population (85% according to the British Crime Survey 2009/10[6]); and with only relatively few coming into direct contact with the police (around 30%), one needs to speculate about the importance of the media in shaping public perceptions of and confidence in the police.

This chapter investigates the impact of the mass media on public confidence in the police. The empirical study presented in this chapter aims to improve on the existing research in two ways. First, methodologically, by systematically relating a large scale media analysis of police coverage in five agenda setting newspapers to a large-scale population representative survey fielded continuously over a three-year period from 2007 to 2010. And second, conceptually, by advancing an explanation of 'media effects' on public confidence that is grounded in theories about the factors that underpin trust and confidence in the police.

To anticipate the main results, the study finds great variability in press reporting with periods of both high and low intensity as well as a number of high profile events. This is not matched by similar changes in public confidence. There is some evidence of small effects on public confidence for media reporting about police community engagement, police misconduct and for how

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[6] http://www.esds.ac.uk/findingData/snDescription.asp?sn=6627

the police treat members of the public in direct encounters. However, reporting of this kind is rare, seemingly too rare to influence confidence in a substantial way. The staple of press reporting on policing - ongoing crime investigations and how effectively the police are handling them - does not appear to have an effect on public confidence. Furthermore, it appears that different newspaper readerships hold different images of the police and appear to be affected differently by reporting on the same type of event.

The rest of the chapter has five sections. Section 2 reviews existing research on media effects and highlights the limitations the research methodologies employed place on the conclusions that can be drawn. Section 3 puts the question of 'media effects' on trust into the context of a theoretical framework of concepts of trust. Section 4 describes the research methodology. Section 5 presents the results and section 6 concludes.

2. Media effects studies – findings and limitations

Media effects research has two traditional views, the strong media effects view and the null-effects view. The oldest and by now marginalised position is that of strong direct media effects. Early media effects research assumed a direct causal effect of mass media on mass behaviour, it hypothesised the public as a vulnerable, uncritical 'sponge' that unthinkingly absorbs media messages. An influential theory in this tradition is Gerbner's cultivation theory which argues that television has a 'levelling effect' that results in more homogenous and convergent opinions and worldviews, in particular amongst heavy television viewers. In this tradition the media have also thought to lead to a 'mean world' view, the belief that the world is more crime-ridden, hostile and dangerous than it actually is. However, after decades of research there is little evidence for a strong direct impact of the media on public opinion. What followed was media research premised on the notion that the public actively and consciously consume media for self-serving purposes - for gratification or reinforcement, pleasure and identity construction - and respond to it individually, rather than as a passive, homogenised mass (see for example Blumler and Katz, 1974).

Audience research shifted the focus to questions of how different audiences interpret and make sense of media messages, and assumes that different subgroups of the population will respond individually and differently to the same media message (Livingstone 1996, Davis 2006). Researchers holding the 'null-effects' view argue that empirical studies consistently fail to provide convincing evidence for a link between media consumption and behaviour across contexts and audiences, and conclude that other (social) factors are far stronger than the media (Barker and Petly 1996, Gauntlett 1998).

Media effects studies on attitudes towards policing and crime are few. Existing research has overwhelmingly focused on the impact of watching crime and violence on television on aggressive and violent behaviour (Gauntlett 2001). The few studies that address the question of how media representation of crime and crime control impacts on public opinion of the police largely rely on survey data (Surette 1998, Callanan and Rosenberger 2011). An exception is Reiner et al. (2000) who used focus groups to study public perceptions of media reporting on crime and policing and how individuals think it affects their views. Three studies illustrate the main survey data based approaches and the types of conclusions they allow. In a correlational study of U.S. survey data Dowler and Zawilski (2007) found a small association between the frequency of watching particular types of crime shows on television and respondents' perceptions of police misconduct. Eschholz et al. (2002) and Dowler (2002) find similar dose-response effects of watching television on attitudes towards the police. Weitzer (2002) studied the impact of two widely known high profile cases of misconduct on public perceptions of how the police treat people, and overall confidence (see also Lasley 1994). Weitzer did so by comparing survey data from a few years before and after these incidents. He found a quite large initial impact, in particular amongst ethnic minorities. After a few years, public confidence returned to its initial level prior to the high profile incident. Miller et al. (2004) combined a media analysis with data from a police user satisfaction survey and a general public opinion survey over a nine-month time span. Over this relatively short time period which was free of high profile incidents, the

authors did not find evidence of a media impact on attitudes. Whilst media coverage fluctuated, public opinions of the police remained stable. The authors conclude that there seems to be a 'buffering' zone of public confidence, a certain range in which media reporting can oscillate without translating into changes in public opinion.

If we look at the research methodologies employed more closely, only Miller et al. (2004) collected data on the media reporting that supposedly had an effect on public confidence in the police. Given the stable nature of public confidence, the time span of the study might have been too small to observe a media-effect in the absence of high profile events. Dowler and Zawilski (2007) relied on self-reported TV viewing habits and related them to respondents' views of the police in a cross-sectional study. Weitzer (2002) focused on the impact of high profile events, with public opinion data measured in 3-5 year intervals, but the study also did not include any form of media analysis. These studies exemplify the picture that emerges from the literature overall: most find small effects, but research designs are weak and the evidence is often mixed and inconclusive (Garland 2001, Reiner 1992, Reiner et al. 2000, Cohen 1987, Beckett 1997, Howitt 1998, Jewkes 2004). The empirical study presented in this chapter aims to make methodological and conceptual contributions to the existing research. Beginning with the latter, the following section puts 'media effects' into the wider context of concepts of trust and confidence.

3. 'Media effects' versus 'causes' of confidence

Reformulating the question for 'media effects' as a question of 'causes' of confidence opens an alternative route to a better understanding of the role of the media in public confidence. What, based on our understanding of confidence, would media representations of the police need to convey in order to influence public confidence in the police?

Confidence in the police can be defined as a belief about the competence and capabilities of the police to fulfil and act according to their specific roles. This includes catching criminals and deterring crime, but also defending the norms and values on which social order is built. Such judgements and beliefs about the police as an institution do not, in and of themselves, necessitate or imply a meaningful relationship between the police and the public. However, empirical research suggests that evaluations of how good a job the police are doing, the standard measure of confidence in the British Crime Survey and the Metropolitan Police London surveys, are not only judgments of police effectiveness, but closely tied to 'motive-based' trust in the police (Jackson and Bradford 2010). The concept of 'motive-based' trust has been developed by Tyler and colleagues (Lind and Tyler 1988, Tyler and Huo 2002). Motive-based trust is social and relational and premised on the idea that there is a social bond between the police and the public that makes it possible to both gauge and influence the interests of the other. Motive-based trust is based on the expectation that the police will have the public's best interest at heart and will act accordingly. This is akin to Barber's (1983) idea of carrying out fiduciary obligations and placing the trustee's interest above their own, and resonates with Earle and Cvetkovich's (1995) definition of trust which suggests trust is based on perceptions of similarity in values and interests. Central to Tyler's concept of motive-based trust are public perceptions of procedural fairness in the criminal justice system, chiefly pertaining to direct encounters with police officers and judges in court. Put simply, people will perceive the police as trustworthy if they have been treated with fairness, dignity and respect, and feel that they were given voice in the interaction.

The 'confidence model' condenses these ideas into three dimensions of confidence: (a) judgments of police engagement with the needs and concerns of the community and expectations of the police to represent and defend society's shared values and norms (b) judgements of the police treating people equally, with fairness and respect in direct encounters and thereby demonstrating moral alignment between the community and the police (c) judgments of police competence (effectiveness) in dealing with crime. Empirical studies show that these three dimensions are distinct yet related, and closely tied to confidence. Perceptions of police community engagement and the notion that the police listen to, understand, share and act upon the concerns of the community appear to have the strongest bearing on overall confidence in the police. Treating people with fairness and respect also carries more weight in people's overall confidence than perceptions of police effectiveness in dealing with crime (Stanko and Bradford 2009, Bradford and Jackson 2010, Bradford et al., 2009, Jackson et al. 2009, Jackson and Bradford 2010).

Returning to the question of what media reporting on the police needs to convey in order to affect public confidence, the confidence model provides us with a way of translating theories of trust and confidence into empirically testable hypotheses.

We would, based on the confidence model, expect media reporting that gives cues about the extent to which the police share the values of and engages with the community (e.g. mention of acts that show the police listen to the local community, know and share their priorities) to influence public confidence. We would also expect confidence to be affected by reporting on procedural fairness. Such reporting could include explicit mention of the police being helpful, treating people fairly and respectfully, giving due consideration to public views, as well as reporting on the absence of such shows of procedural fairness, for example police brutality, racism and abuse of police powers. The procedural justice model has mostly been applied to and thought about in the context of direct encounters with police, but not in the context of media effects. To what extent cues about procedural fairness work when mediated through press

reporting remains to be tested. Finally, to a lesser extent, reporting on police competence and effectiveness in handling crime cases should impact on public confidence in the police.

The study presented here thus aims to test the following set of hypotheses:

(a) Reporting on police activities that demonstrate community engagement has a positive impact on confidence in the police.

(b) Reporting on fair and respectful police treatment has a positive effect on confidence in the police and reporting on the absence of procedural fairness, especially the extreme case of police misconduct, has a negative impact on public confidence in the police.

(c) Reporting on how effective the police are in dealing with crime has a negative impact if the reporting is critical, and has a positive impact if the evaluation is positive.

(d) The effect of press reporting on community engagement and procedural fairness is larger than the effect of reporting on police effectiveness, because the latter is the 'weakest' driver of confidence.

4. The study

In order to test the hypotheses, the study combines a large-scale population representative survey of Londoners interviewed between April 2007 and March 2010 with a media analysis that measured - through manual coding of 9,000 articles - various aspects of police coverage in five major London newspapers over the same period. In the survey respondents were asked which newspaper(s), if any, they read regularly. Together with the interview date this allowed assigning the media measures for this particular newspaper and time point to every observation in the survey dataset.

The survey data come from the Public Attitude Survey (PAS) of the Metropolitan Police London (Met). Face-to-face interviews are held continuously throughout the year. The randomly selected annual sample of 20,000 respondents is representative of Londoners aged 16 and over. The PAS includes a wide range of questions on experiences with, perceptions of and

attitudes towards the police and crime as well as socio-demographic characteristics.

The content analysis of newspaper reporting covers articles published during the fieldwork of the PAS between April 2007 and March 2010. Monthly measurement intervals were chosen as this is the smallest time interval that allows the PAS sample size to remain large enough for separate analyses of different newspaper readerships. The five agenda setting newspapers the Guardian, the Times, the Daily Mail, the Mirror and the Sun were selected as to cover quality broadsheets, mid-market papers as well as tabloids and to represent a wide range of political leanings and worldviews. The articles were retrieved from Lexis-Nexis searching for articles with the term 'police', 'cops', 'Yard' or the 'Met' in the headline and 'London' anywhere in the text. Within any given newspaper and month, all articles were coded if there were less than 50 articles. If a newspaper published more than 50 articles with any of the keywords in it within a month, a random sampling procedure was used to select 50 articles for coding, with replacement of 'false positives'. False positives are articles that are duplicates, fictional, historical or otherwise outside the scope of the study. For example, the reporting on the Madeleine McCann case of a missing British girl in the summer of 2007 has been excluded (unless British police were explicitly mentioned in the article) because it was Portuguese police investigating the case. A total of 9,290 articles were selected and coded: 40.8% of those were false positives; so the media measures are estimated based on 5,495 articles.

A survey question on newspaper readership included in the PAS was used to match respondents to the media 'treatment' they are most likely to have received. The total sample size of the survey is 61,436 respondents. Of these, 25,439 respondents read one of the five newspapers and were included in the study. A further 4,218 respondents read two or more of these five papers. They were excluded from the study because one would have to make specific assumptions about how reading more than one newspaper plays out to be able to decide whether one can assign them to a 'primary' newspaper or

alternatively average, multiply or otherwise aggregate the 'media treatments' the respondents received from the two or more newspapers. Making such assumptions is difficult and arguably not necessary to answer the research questions at hand. Excluding these cases should not introduce any bias as the purpose of this study is to generalise on the effect that exposure to the five newspapers has on public opinion – for this purpose it is more sensible to focus on those respondents who received 'undiluted' treatment rather than a mix of treatments when it is not clear how multi-readership changes the effect.

Measurement of concepts

Public confidence in the police was measured using the standard single item question 'How good a job are the police doing in this local area?' Respondents were asked to answer this question on rating scale from 1 'very poor' to 5 'excellent'.[7]

A latent trait score was used to measure *motive-based trust* in the police. A latent trait score is, like a sum score or a factor score, a way of condensing a scale consisting of multiple items into a single measure. A latent trait score has been chosen over a conventional factor score because of the measurement level of the items in the motive-based trust scale. Factor scores are only adequate for continuous variables. The items in the motive-based trust scale are ordinal, rendering a latent trait score the best option. The score is based on 8 survey items where respondents were asked to rate on a 5-point scale the extent to which the they feel the police listen to the concerns of the local people, understand the issues that affect the community, are dealing with things that matter to the community and can be relied upon to be there when you need them, treat everyone fairly regardless of who they are, would treat the respondent with respect if they had contact with them for any reason, are friendly and approachable, and are helpful. The latent score has a range of 6.57 with a minimum of -3.71 and a maximum of 2.86.

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[7] See Jackson and Bradford (2010) for an in-depth discussion and empirical analysis of this confidence measure.

In the content analysis, the *intensity of media reporting* was measured by the number of Lexis-Nexis returned articles minus the false positives. For a month in which there were more than 50 articles and thus only a randomly selected sample of them was coded, the total number of valid articles was estimated by multiplying the total number of retrieved articles by the proportion of valid (non false-positive) articles in the coded sample. The measurement of specific characteristics of media reporting was done through manual coding. Five coders coded the 9,290 articles using a coding frame that together with detailed explanations and instructions defines the measures as follows

- False positives (no=0, yes=1)
- Acts of police community engagement (mentioned=1 or not=0)
- Police treatment: misconduct (mentioned=1 or not=0) and treatment in direct encounters (not mentioned=0, poor treatment=1, explicitly fair/respectful treatment=2)
- Police effectiveness: in a specific crime case and separately, organization as a whole (not mentioned=0, negative=1, neutral=2, positive=3, ambiguous=4)
- Crime statistics (no=0, yes=1)
- Overall tone (negative=1, neutral=2, positive=3 and ambiguous=4)

The coding frame was pre-tested by two coders on 50 articles. To ensure good coder reliability between all coders, coders were trained thoroughly, the coding frame had precise and comprehensive descriptions for each measure and ambiguous articles were discussed with the primary researcher throughout the coding processes. To minimise potential bias introduced through the assignment of newspapers to coders (and months to coders) a randomisation procedure was used to allocate newspaper articles to coders. Inter-coder reliability was tested by double coding 200 articles. Inter-coder agreement was good for all variables; the lowest kappa was 0.50 and the percentage of inconsistently coded articles less than 10% for each of the variables.

The data from the content analysis were then aggregated into *proportions of articles* (out of the total number of articles within month and newspaper) mentioning, for example, police community engagement, within a given newspaper and month. Because the media measures are monthly rather than daily, survey respondents could not be assigned an accurate measure of their media exposure over the past month. Instead, media measures had to be weighted to a moving 30.5-days window depending on the day of the month a respondent had been interviewed. For example, a respondent interviewed on the 27th of May would be given the average exposure of 27/31 of the May measure and 4/30 of the April measure whilst a respondent interviewed on the 3rd of May would get 3/31 of the May measure and 27/30 of the April measure.

5. Results

5.1 Descriptive analysis of police portrayals

Before testing the set of hypotheses, this section describes how reporting on the police developed over the three-year period, and as this will become important later on, the section also describes how police portrayals differ between newspapers. *Figure 1* shows the observed and the smoothed trajectory of the intensity of police coverage across the five agenda setting newspapers.
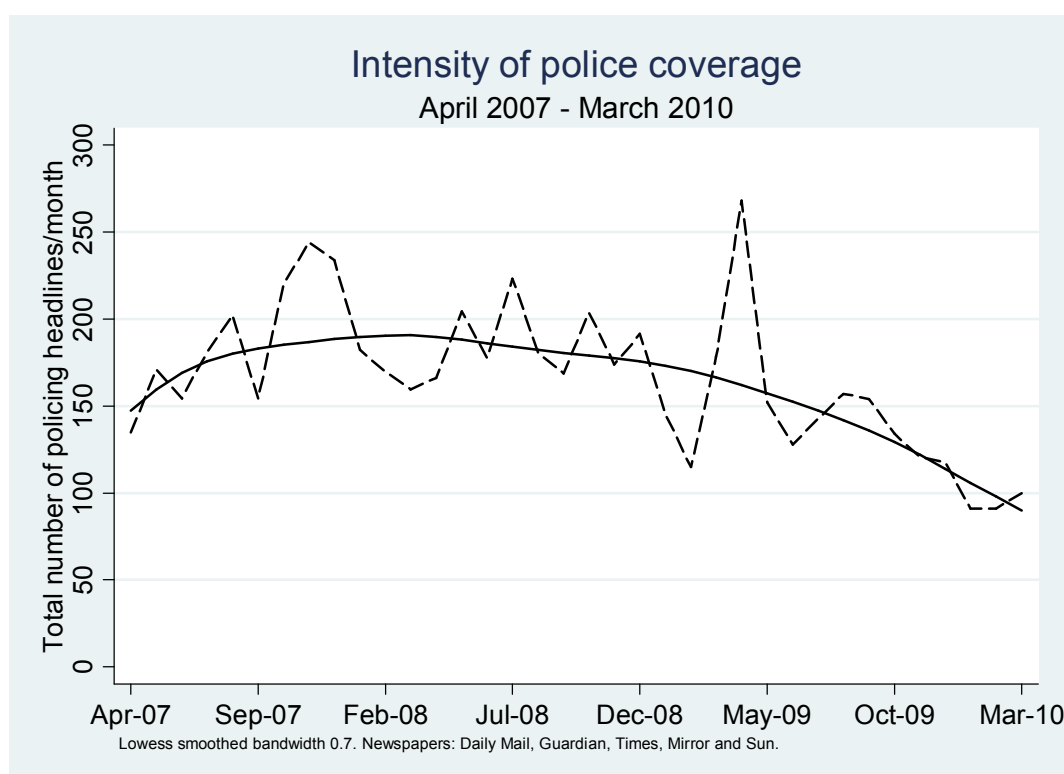
Figure1. Total number of articles referring to police in the headline.

Police coverage increased from 2007 to 2008 and then declined from 2008 onwards. On average, each newspaper published 33 articles per month, with a standard deviation of 19.25 articles, a minimum of 7 articles and a maximum of about 100 articles per month. There is, however, much variation within this three-year period, and the overall trend is dented with blips and spikes. The spikes coincide with notable crime and policing events. *Table 1* gives a chronological overview.

Table 1. Notable crime and policing events between April 2007 and March 2010.

Date	Event
July 2007	Crown Prosecution Service drops 'cash for honours' investigation without charges. 'Cash for honours' refers to the practice of awarding life peerages in return for political donations. 'Cash for honours' caused a major political scandal followed by extensive police investigation in 2006 and 2007.
October 2007	Met questioned over cost of futile 'cash for honours' investigation. Sir Ian Blair criticised over his bonus pay.
November 2007	Met criticised for large unaccounted credit card expenses.
December 2007	Pay dispute between the police and the Home Secretary Jacqui Smith.
January 2008	Ipswich murder trial opens after the arrest of the serial killer Steve Wright.
May 2008	Police foil terror attack in Exeter.
June 2008	Met internal racism allegations against Sir Ian Blair.
July 2008	Nepotism allegations against Sir Ian Blair.
October 2008	Opening of trial for police misconduct in the shooting of Jean Charles de Menezes (2005). Sir Ian Blair resigns as the commissioner of the Metropolitan Police London.
December 2008	Jury returns open verdict in de Menezes trial. Critique of police blunders in the arrest of MP Damian Green and earlier investigations like of the murder of Rachel Nickell (1992).
January 2009	Sir Paul Stephenson announced as the new commissioner of the Metropolitan Police London.
April 2009	G20 protest policing, death of Ian Tomlinson after beating by police officers.
July 2009	Beginning of allegations against 'News of the World' of hacking the phones of major public figures.
October 2009	Inquest of police failures in the case of Fiona Pilkington who killed her disabled daughter and herself in 2007 after years of abuse and anti-social behaviour by youths of which police knew.
February 2010	Further revelations in the 'News of the World' phone hacking scandal.

The biggest spike in newspaper coverage was caused by reporting on the questionable policing tactics at the G20 protests that appeared overly brutal, humiliating and inappropriate (April 2009, 268 articles). Particularly intense coverage received footage showing how Ian Tomlinson, a physically weak newspaper vendor bypassing the protests, collapsed and died after being beaten by police. A second period of intensive coverage is autumn of 2007 (220 articles in October, 244 articles in November and 234 articles in December). In October 2007 the press gave intense coverage to the questioning of the police by MPs over the cost of the large-scale 'cash for honours' investigation of political donations made in exchange for peerages. The investigation had proven futile two months earlier when the Crown Prosecution Service decided to press no charges. In October 2007 assistant commissioner John Yates accused Sir Ian Blair of obstructing the 'cash for honours' investigation followed by public and police internal disapproval of Ian Blair's bonus pay. In the following month, November 2007, criticism continued over large credit card expenses the Metropolitan police could not account for. In December 2007, policing headlines were dominated by the pay dispute between the police and the home secretary Jacqui Smith.

The third biggest spike in police coverage has been recorded in July 2008 (223 articles). During this month Sir Ian Blair was accused of nepotism in helping a friend getting a major IT contract with the Met. This came shortly after he faced accusations of Met internal racism against Asian officers in the previous month. The next biggest spike, October 2008 (204 articles) marks the opening of the trial for police misconduct in the killing of Jean Charles de Menezes on the 1st of October 2008 which received intense coverage and was followed by renewed calls for Sir Ian Blair to resign, which he did within the same month. Jean Charles de Menezes was a Brazilian man shot in the head seven times by police officers at a London tube station in July 2005 after he had been misidentified as one of the terrorist suspects in the London bombings. The de Menezes case, the policing of the G20 protests, the scandals around Sir Ian Blair, and the expensive yet futile 'cash for honours' investigation account for seven of the eight highest spikes in media coverage.

Overall, the majority of the newspaper articles remain neutral or ambiguous (40.1%, and 20.3%, respectively). Negative articles tend to outweigh positive articles (25.5% negative articles compared to 3.3% positive articles). This finding might be explained by what newspapers deem newsworthy. Newspapers are the most critical media outlet, as opposed to movies and television which paint a much more positive picture, especially fictional and semi-fictional formats (Reiner 2010). *Figure 2* shows a slight trend toward a more negative reporting, although the three-year period might not be enough to establish a long-term trend. The tone of police reporting is volatile and depends on current events. Unsurprisingly, we observe the most negative reporting in the months of intense coverage of major police scandals: October 2008 (de Menezes trial, Blair resignation), December 2008 (police blunders), October 2009 (Fiona Pilkington case) and in August 2007 (Heathrow climate protests, police blunders in various ongoing investigations). The months in which positive reporting outweighed negative police reporting are few: July 2007 (the police hand the 'cash for honours' case to the Crown Prosecution Service, confident the evidence would lead to charges), January and February 2008 (Ipswich murder trial). Positive reporting also outweighed negative reporting in the comparatively eventless and scandal-free months when policing coverage was largely confined to current crime investigations (April 2007 and January 2009).
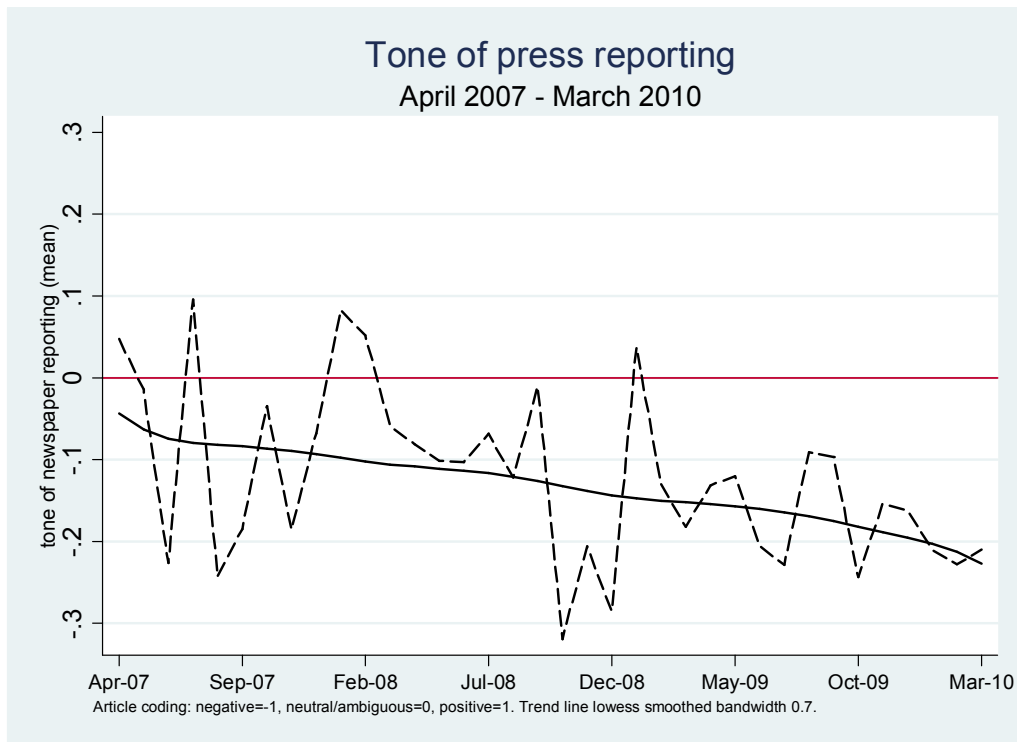
Figure2. Tone of press reporting over time.
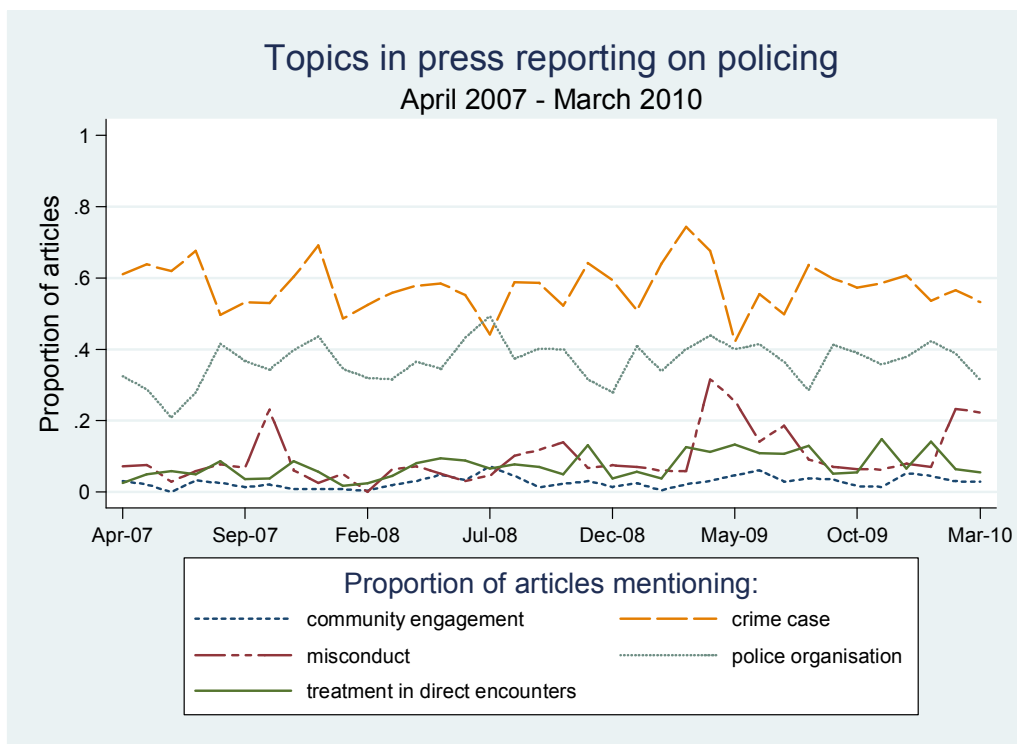
Figure 3. Topics in media coverage of the police over time.

Figure 3 shows trends in the contents of the newspaper articles through the lens of the 'confidence model'. Over time, the composition of newspaper reporting remained largely stable with no trends emerging. There are however a few spikes which coincide with the aforementioned key events. Most articles are about police investigations in a specific crime case (57%), less than 40% comment on the police organisation (*Table 3*). The evaluation of police effectiveness in handling criminal cases is mostly neutral (47%) and relatively rarely depict the police as incompetent or ineffective (24%) in handling cases. In contrast, the majority of articles that refer to the police as an organisation are critical (34%) or ambiguous (37%) in their evaluation. The effectiveness of the police organisation as a whole is evaluated less positively than police effectiveness in specific crime cases.

Only 8% of the newspaper articles explicitly comment on how the police have treated a member of the public in a direct encounter. Of these, 90% report disrespectful or discriminating behaviour by police officers, only 10% explicitly mention fair and respectful treatment or the police being helpful to a member of the public. This means that a key driver of confidence, fair and respectful treatment, is reported in less than 1% of the total number of articles on policing. Albeit cases of police misconduct receive greater attention (8% of the total number of articles) they are infrequent and event-driven: 56% of the articles reporting on misconduct were recorded in the months of the policing of the G20 protests and the subsequent investigations into potential police misconduct, the inquest into the shooting de Menezes by police officers and calls for Sir Ian Blair to resign over this incident.

Police community engagement (i.e. acts demonstrating that the police listen to the concerns of the local community, respond to them or show themselves transparent and accountable for what they are doing to address local issues) are mentioned in less than 3% of the articles, again, with no time trend emerging.

In summary, police *effectiveness,* which according to the confidence model is the least important driver of confidence, gets routinely evaluated. In contrast, the

two most important drivers of confidence, *police community engagement* and *fair treatment* receive little media attention. Less than 3% of the articles mention the former and only 1% of the articles mention the latter. This pattern is stable with no trends emerging over the three year period.

This finding has two major implications: firstly, because reporting on police fairness and engagement is rare and the bulk of media reporting focused on the least important driver of confidence – police effectiveness - newspaper reporting is unlikely to have a strong impact on public confidence. Reporting on acts of police community engagement and on how the police treat members of the public in direct encounters might be too few and far between to have an impact on public confidence in the police. Secondly, given that the media do not report on police community engagement and fair treatment the police have to use means of direct communication to communicate engagement and procedural fairness to the wider public that does not come into regular contact with police officers.

5.2 Descriptive analysis of newspaper profiles

The study considers five agenda setting newspapers, their basic characteristics are summarised in *Table 2*.

Newspaper	Type	Political orientation
The Times	Broadsheet	Right
The Guardian	Broadsheet	Left
The Daily Mail	Mid-market	Right
The Sun	Tabloid	Right
The Mirror	Tabloid	Left

Table 2. Basic description of newspapers.[8]

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[8]Source: http://www.britishpapers.co.uk

Focusing on police reporting, *Figure 4* shows that compared to the other newspapers, the Sun and the Mirror publish, on average, the lowest *absolute* number of police headlines. That is not surprising given they are tabloids which generally contain much fewer articles than broadsheets. If we take into account the overall number of articles within one edition, the *proportion* of articles on policing is highest in the tabloids and lowest in the broadsheets (Reiner 2010). The Daily Mail has, on average, the highest level of police coverage and also the greatest variability over time, appearing to be more story-driven than the Guardian and the Times which have very similar levels of policing coverage and much lower variation in the number policing headlines per month.

The following newspaper profiles of policing coverage are based on *Figure 5, Figure 6* and *Table 3* below.

The Daily Mail

The Daily Mail had the highest intensity of policing coverage until December 2008, but coverage has been decreasing continuously since. Compared to the other newspapers, the Daily Mail reports less frequently on police misconduct, is more likely to relate crime statistics to policing and criticises the police organisation more frequently than any other newspaper in the study. The number of negative articles exceeds the number of positive articles throughout the three-year period. Yet, during the G20 protests when police were heavily criticised for their policing tactics by other newspapers (in particular the Guardian) the Daily Mail remained sympathetic.

The Sun

In the Sun, policing coverage is overwhelmingly about investigations of ongoing crime cases. Like the tabloid the Mirror, the proportion of articles featuring police misconduct is high and the proportion of articles on the police organisation comparatively low. The Sun is least critical of police practices, gives the most positive evaluation of police effectiveness in handling crime cases and is the most supportive of the police. The tone of the Sun's coverage remained, similar to the Daily Mail, supportive of police when the more left-wing papers the Guardian and the Mirror heavily criticised the police brutality

towards G20 protesters. Yet, the overall police-sympathetic tone changed temporarily in relation to the allegations against Sir Ian Blair in 2008, and in October 2009 with reference to the case of Fiona Pilkington.
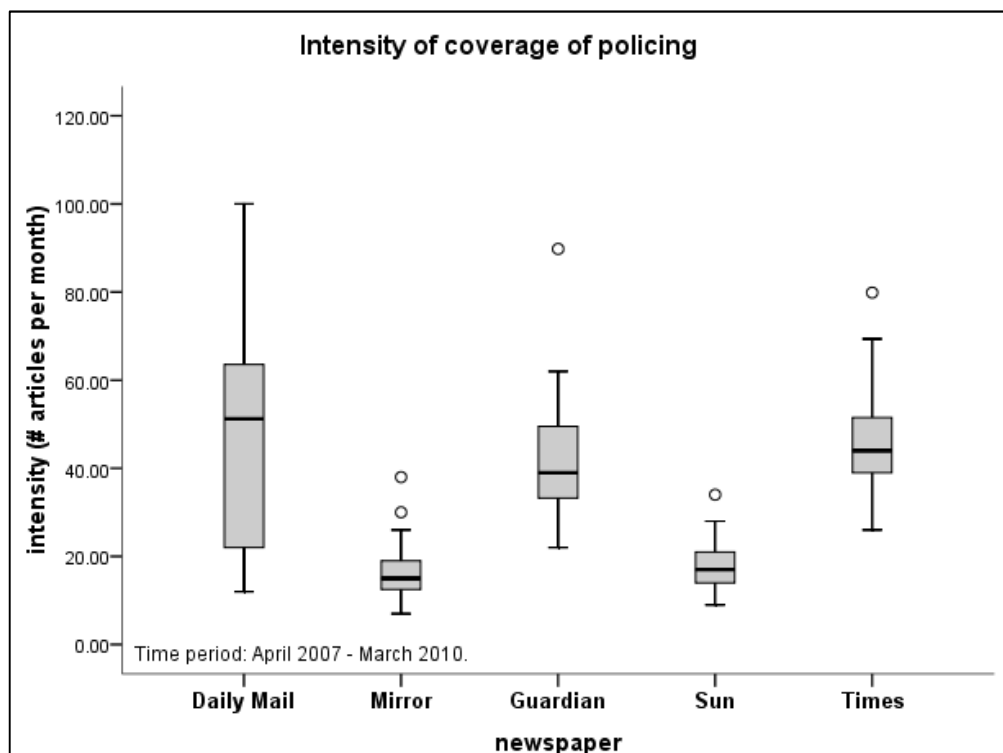
Figure 4. Boxplot. Number of policing-related articles per month.[9]

The Mirror

Characteristic of the Mirror is the relatively high proportion of articles on police misconduct and poor treatment of members of the public at the hands of police officers. In this regard Mirror coverage is akin to the other left-wing paper in the study, the Guardian. Compared to the other newspapers, the Mirror has the lowest frequency of reporting on the police organisation. Mirror coverage shows great event-driven volatility in how critical or supportive the tabloid is of the police. Critical coverage of the police temporarily spiked in relation to the de Menezes misconduct inquest and subsequent resignation of Sir Ian Blair, and in the aftermath of the G20 protests. Yet, the Mirror also praised the police in a large number of articles in January and February 2008 (Ipswich murder trial).

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[9] On the outliers (circles): three of the five outliers are the month April 2009 (G20 protests), in the Times also the month October 2007 (de Menezes trial) and in the Mirror, August 2007 (various unrelated crime investigations).

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The Guardian

The Guardian comments on poor treatment by police in direct encounters more frequently than any other newspaper, and is least likely to pass a positive judgement on how the police handle a specific crime case. Still, compared to the other newspapers the Guardian reports comparatively neutrally. Since Sir Ian Blair started facing racism and nepotism allegations in summer 2008 the tone has become increasingly more critical. The Guardian had a particularly intense and critical coverage of the policing of the G20 protests (April 2009) and the police investigation of phone hacking of hundreds of public figures by the 'News of the World' (February and March 2010), resulting in an extremely high ratio of negative to positive articles in those months and adding to the overall trend towards a more critical evaluation of the police.

The Times

The Times publishes the highest proportion of articles on the police organisation. On all other criteria considered in this study, the Times coverage of policing is balanced and moderate, neither particularly critical nor particularly supportive. The intensity of policing coverage and overall tone are fairly consistent over the three-year period, with small spikes in coverage during prominent key events.
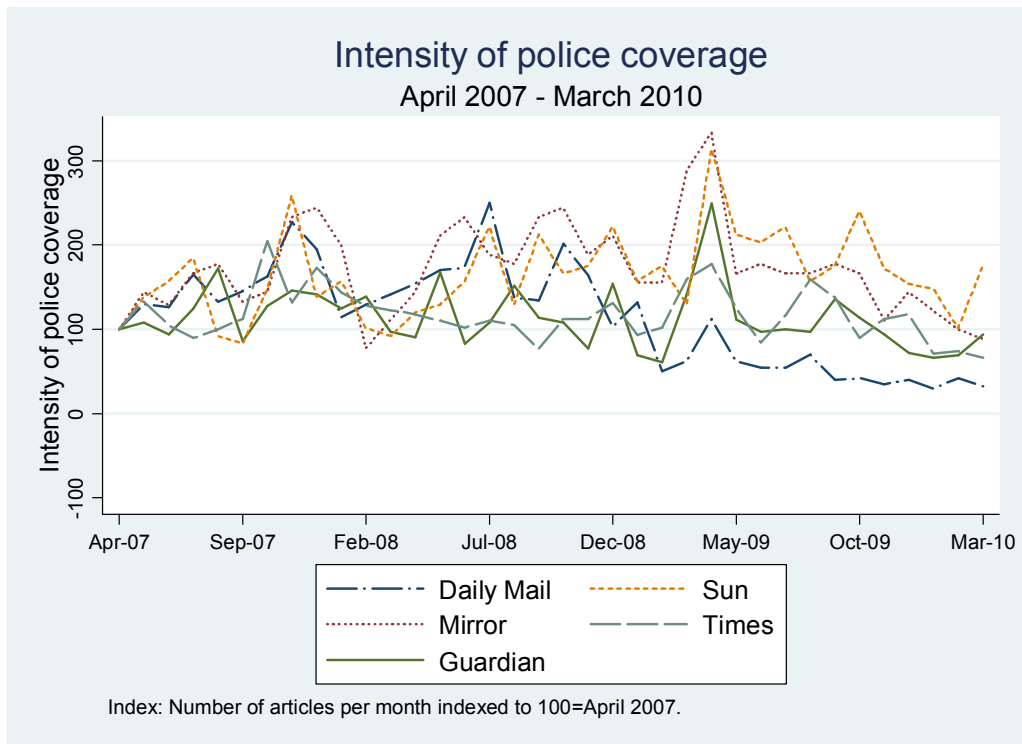
Figure 5. Intensity of policing coverage in different newspapers.
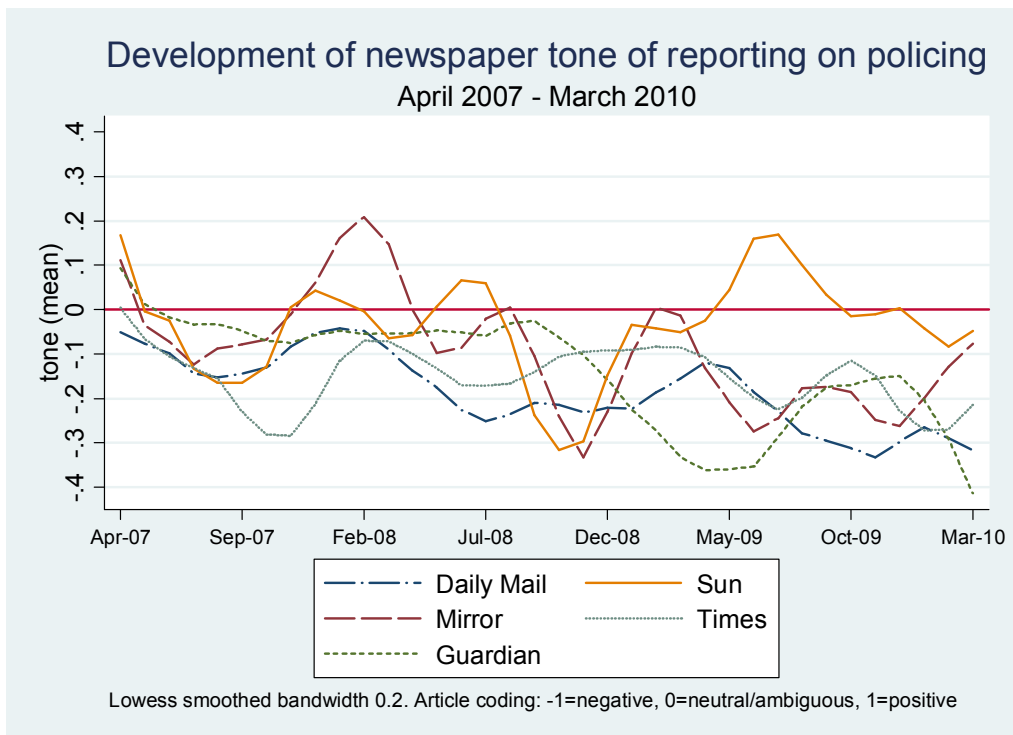
Figure 6. Development of newspaper tone of reporting on policing.

Table 3. Coverage of policing in different newspapers.

% of total articles mentioning:	Daily Mail	Mirror	Guardian	Sun	Times	Overall
Topics						
Specific crime case	52%	62%	64%	60%	52%	57%
Police organisation	43%	25%	40%	28%	46%	39%
Community engagement	3%	2%	3%	2%	3%	3%
Misconduct	5%	15%	7%	15%	7%	8%
Poor treatment	7%	6%	8%	5%	5%	7%
Fair and respectful treatment	1%	0%	0%	1%	0%	1%
Crime statistics	7%	3%	6%	4%	5%	6%
Evaluation crime case effectiveness						
- negative	29%	26%	22%	16%	23%	24%
- neutral	43%	47%	50%	48%	45%	47%
- positive	15%	18%	12%	20%	14%	15%
- ambiguous	13%	9%	16%	16%	17%	15%
Evaluation organisational effectiveness						
- negative	39%	35%	31%	25%	34%	34%
- neutral	13%	15%	18%	15%	19%	16%
- positive	9%	19%	9%	22%	13%	12%
- ambiguous	38%	32%	42%	39%	34%	37%
Overall tone						
- negative	28%	26%	22%	22%	27%	25%
- neutral	36%	44%	45%	41%	38%	40%
- positive	12%	14%	10%	19%	12%	13%
- ambiguous	24%	16%	24%	18%	22%	22%
Sample size: n=5,495 articles.						

Table 3. Coverage of policing in five newspapers.

5.3 Descriptive analysis of confidence trajectories

Figure 7 plots the development of public confidence against the intensity of media reporting. We observe a slight dip in confidence in February 2008 which appears paradoxical given that the media coverage of police was – largely due to the Ipswich murder trial - unusually positive reporting. We also observe a small temporary increase in confidence in the month after Sir Ian Blair's resignation (October 2008). However, these temporary changes are very small and overall, public confidence has been very stable and slightly increased over the three-year period. Yet, as discussed above in detail, newspaper coverage of policing has varied greatly over the same period, with high profile events and stretches of both high and low intensity of media coverage.

Media reporting on and public confidence in the police
April 2007 - March 2010

intensity of media reporting — public confidence

Intensity (number of articles per month) and public confidence indexed to April 2007=100.
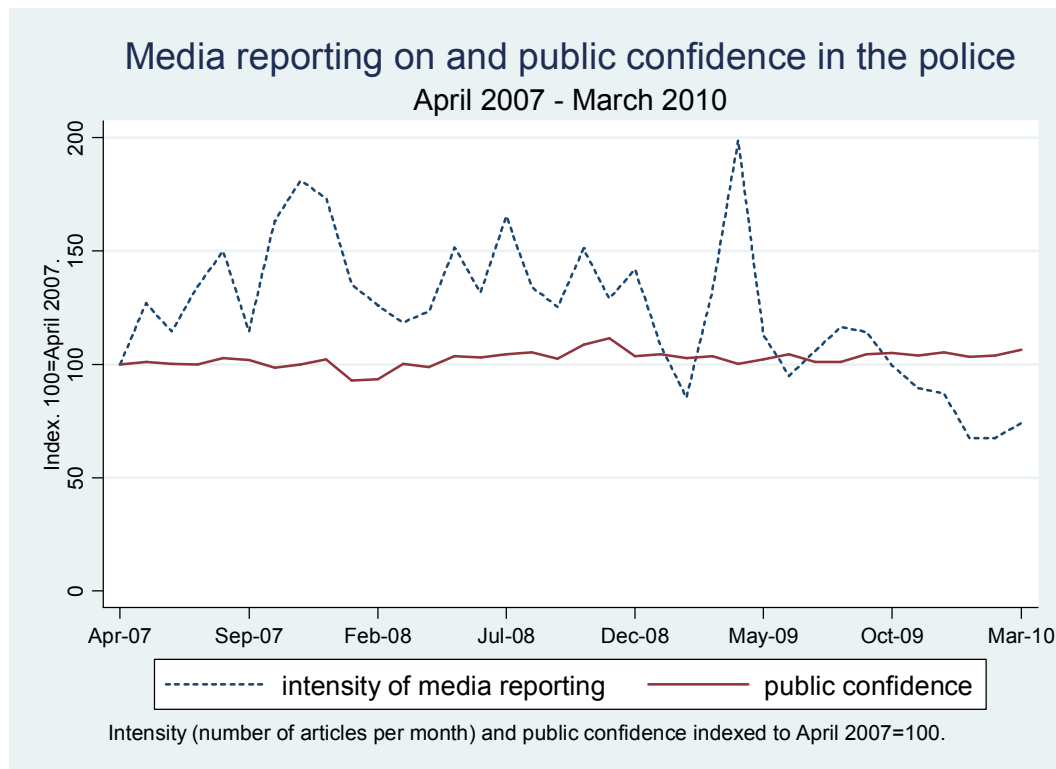
Figure 7. Media coverage of and public confidence in the police.

The virtually absent variation in public confidence over time in the presence of great variation in media coverage is evidence against the hypothesis that changes in the intensity of media coverage have an impact on public opinion. In the descriptive analysis above we have seen that media coverage does not only vary greatly over time, but also between newspapers. The five newspapers differ in their coverage of policing with regard to topics, tone and intensity of coverage. This is to be expected given that the newspapers selected for this study were chosen to represent a wide range of political leanings, worldviews and readerships, and include tabloids as well as broadsheets. Perhaps, in averaging over newspaper readerships, we are masking co-variation between media reporting and confidence within newspaper readerships? *Figure 8* shows the development of confidence for the different newspapers and *Table 4* tests whether the observed differences in confidence levels between newspapers are statistically significant in a simple linear regression model[10]. Albeit statistically

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[10] 'Confidence' is measured on a 5-point scale and thus an ordinal rather than a continuous variable, rendering ordinal regression the most appropriate regression method. Ordinal regression has been tested for this an all subsequent regression analyses presented in this paper. The findings do not differ from those produced by standard linear regression method and thus the latter been chosen for ease and parsimony of presentation.

significant, the differences in confidence levels between newspapers are small. This is surprising given the amount of variability in policing coverage and worldviews between the newspapers.
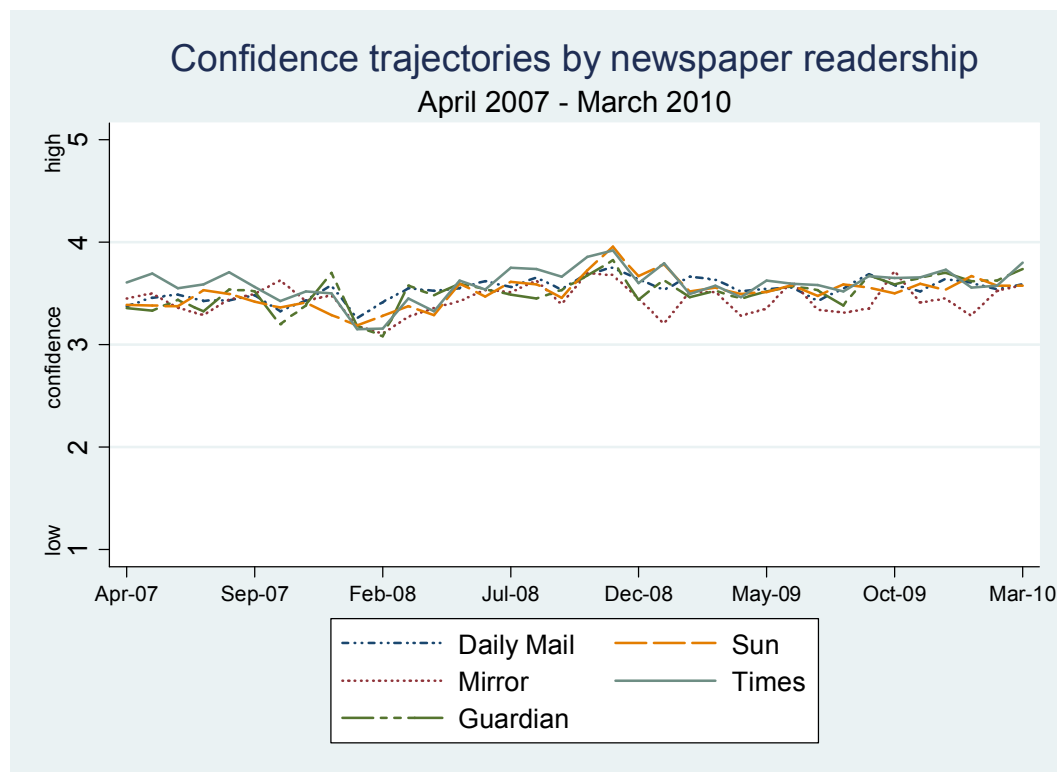
Figure 8. Confidence in the police by newspaper readership.

Response variable:	
Confidence in the police	**coefficient**
time	.0166***
time (squared)	-.00029***
Daily Mail (ref.: Sun)	.0333**
Mirror (ref.: Sun)	-.0593***
Guardian (ref.: Sun)	0.011
Times (ref.: Sun)	.0738***
Intercept (i.e. mean Sun)	3.35***
* p-value<0.05 ** p-value<0.01 *** p-value<0.001	
Sample size n=23,833	

Table 4. Linear regression predicting public confidence in the police.

The confidence trajectories of the five newspaper readerships are largely parallel, yet at a few time points they appear out of sync. For example, Guardian readers experienced a greater loss in confidence than readers of other newspapers in October 2007 when the police were questioned over the cost of the futile 'cash for honours' investigation and Sir Ian Blair was criticised for his bonus pay. The resignation of Ian Blair in October 2008 appears to have resulted in a small confidence regain across newspaper readerships, yet not in Mirror

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readers. Mirror readers also showed a greater loss of confidence in April 2009 (G20 protests) than readers of the other four newspapers. In turn, the appointment of Sir Paul Stephenson in January 2009 appears to have restored confidence in Daily Mail and Mirror readers, however not amongst the readers of the Guardian, the Times or the Sun. These differences are small, yet might point towards different newspaper readerships being affected by different types of events and responding differently to the same event. And, perhaps it is not so much the intensity, but the contents of policing coverage that matters? With this observation in mind, let us now turn to the hypotheses this study set out to test.

5.4 The effect of media reporting on public confidence in the police

Given the stability of patterns of media reporting (*Figure 3)* and public confidence (*Figure 7* and *Figure 8)* over this three-year period, the following regression analysis shifts the focus from an over-time perspective to how media reporting affects public levels of trust cross-sectionally, pooling data from all three years. To probe the hypotheses formulated above, the regression analysis tests the effect on public confidence in the police of reporting on police community engagement, police fairness (including the extreme case of its absence, misconduct) and police effectiveness. Given the observed differences between newspapers, regressions are run separately for each newspaper. Because the data are pooled across three years, a time variable is introduced that controls for any trending in public confidence that is due to something other than the explanatory variables in the model. Finally, to separate the impact of contents of media portrayals from a potential 'any publicity is good publicity'-effect, the models control for intensity of media coverage (indexed to 1=April 2007 within each newspaper). The results are shown in *Table 5*.

Table 5. Linear regression predicting the impact of media coverage on confidence					
Response variable	Daily Mail	Sun	Mirror	Guardian	Times
Confidence in the police	coeff.	coeff.	coeff.	coeff.	coeff.
Full model					
time	0.015***	0.007***	-0.002	0.008*	0.003
intensity	0.342**	0.205	0.176	-0.210	0.440
intensity (squared)	-0.091*	-0.057	-0.033	0.071	-0.224
engagement	-0.670	0.357	0.791	-0.926	3.710***
misconduct	-0.409	0.391***	0.228	0.006	-0.205
treatment					
- poor	-0.156	-0.013	-0.247	-0.340	-0.534
- good	1.230	1.580***	-2.110	6.210**	0.968
effectiveness crime case					
- neutral	0.544*	0.194	0.245	-0.152	-0.660**
- negative	0.067	0.498**	0.268	0.111	0.688*
- positive	0.308	0.032	-0.828***	-0.129	1.630***
- ambiguous	1.090**	0.208	-0.078	-0.705	0.092
effectiveness organisation					
- neutral	-0.392	0.273	-0.395	-0.049	0.208
- negative	-0.133	0.630**	-0.155	-0.369	0.380
- positive	-0.630	-0.286	-0.098	0.220	-1.620***
- ambiguous	-0.423*	0.379**	0.035	0.277	-0.461
intercept	2.990***	2.930***	3.300***	3.660***	3.310***
Sample size	6309	8295	3291	2678	3260
* p-value<0.05 ** p-value<0.01 *** p-value<0.001					
Descriptive statistics of variables in the model:					
Confidence in the police: 1= low 5=high					
Time: min=1 max=36; Intensity: Indexed to 1=April 2007.					
All other variables: Proportion of articles out of the total number of articles within month and newspaper					

Table 5. Linear regression predicting the effect of media reporting on public confidence.[11]

The first hypothesis states that reporting on police activities that signals the police listen, understand and respond to the issues and concerns of the local community (engagement) has a positive impact on public confidence.

Controlling for other characteristics of newspaper reporting, the results show a confidence-enhancing effect of reporting on community engagement in the Times readership. A 10-point increase in the percentage of articles reporting on community engagement is associated with a 0.37 point increase in confidence (measured on a five point scale).[12] To put this effect size into perspective, we

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[11] Only the full model is presented here. A series of regression models that separately tested the effect of reporting on community engagement, fair treatment and police effectiveness (controlling for intensity and time) have been fitted, the results from these smaller models do not change the picture that emerges from the full model.

[12] Note that the media variables in *Table 5* are measured as proportions of articles rather than percentages of articles (proportions and percentages out of the total number of articles). The regression coefficients in the table are interpreted as follows: For The Times readers, a 1-point increase in the proportion of articles mentioning community engagement (range 0 to 1) is equivalent to a 100-point increase in the percentage of

need to remember that articles on community engagement are rare. The Times publishes, on average, a mere 1.3 articles a month mentioning an act of police community engagement.

The effect of newspaper reporting on community engagement is not statistically significant in any other newspaper readership. To this point the empirical analysis has not accounted for the close relationship between confidence - a belief about the competence and capabilities of the police to fulfil and act according to their specific roles - and motive-based trust which is based on perceived moral alignment between the police and the public (Section 2). *Table 6* shows the results of a regression model that includes an interaction effect between reporting on community engagement and a measure of motive-based trust. The interaction effect is used to test whether the effect of media coverage on public confidence is contingent on the level of motive-based trust.

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articles mentioning community engagement and associated with a 3.71 point increase in confidence (range 1 to 5).

Response variable	Daily Mail	Sun	Mirror	Guardian	Times
Confidence in the police	*coeff.*	*coeff.*	*coeff.*	*coeff.*	*coeff.*
Model 1					
engagement	-1.96***	0.032	0.457	-0.705	2.7**
- engagement*trust	-.882**	.409*	0.189	-0.504	-0.476
Model 2					
misconduct	-0.042	.187*	0.125	0.267	-0.302
- misconduct*trust	0.032	0.030	-0.024	-.357**	-0.239
Model 3					
treatment					
- poor	-.568*	-0.189	-0.188	-0.292	-0.347
- poor*trust	-.382*	-0.132	-.312*	-.655***	-0.042
Model 4					
treatment					
- good	0.672	.907*	-0.960	3.570	-0.894
- good*trust	0.047	0.447	1.550	2.230	-0.367
Coefficients for all other variables in the model (full model, table 4) not displayed.					
* p-value<0.05 ** p-value<0.01 *** p-value<0.001					
Descriptive statistics of variables in the model:					
Confidence in the police: 1= low 5=high mean=3.54					
Motive-based trust: min.=-3.71 max=2.86 mean=-.14					
Time: min=1 max=36; *Intensity:* Indexed to 1=April 2007.					
All other variables: Proportion of total number of articles mentioning the category, e.g. engageme					

Table 6. Linear regression predicting the effect of media coverage on confidence.

The findings suggest that the effect of newspaper reporting about police community engagement on confidence in the police depends on the level of motive-based trust in the police: the greater a Sun reader's motive-based trust in the police, the greater the positive impact of reporting about community engagement on their confidence in the police. For Daily Mail readers reporting about acts of community engagement has a negative effect on confidence, and the negative impact is larger the greater the Daily Mail reader's motive-based trust in the police. We can only speculate about potential explanations. Perhaps the reported acts of community engagement are at odds with either the image Daily Mail readers have of police – tough crime fighters rather than 'social workers' - and might have been directed to groups of the population that Daily Mail readers do not identify or sympathise with.

To this point, the hypothesis is supported with modifications: newspaper reporting on police community engagement has a positive impact on

confidence in some members of the public, but no or even a negative impact on others. The effect on confidence in the police depends on which newspaper readership a respondent belongs to (no effect on Mirror and Guardian readers), and within some readerships also on the level of motive-based trust in police (Sun and Daily Mail readers). Such an interaction effect is also observed as we move to the second hypothesis.

The second hypothesis states that reporting on how the police treat members of the public in direct encounters has an impact on public confidence in the police. For Guardian and Sun readers, reporting on fair and respectful treatment has a small confidence enhancing effect. Again, it is important to remember that explicit reporting on police officers treating people with fairness and respect is rare – it is mentioned in less than 1% of the articles. Whether and to what extent reporting on poor treatment has a negative impact on confidence depends on the level of motive-based trust. Poor treatment shakes confidence in the police more in those whose confidence is tied to high levels of motive-based trust. Reporting on police misconduct only has a negative impact for Guardian readers, with the effect again being dependent on the level of motive-based trust. In contrast, reporting on police misconduct appears to enhance confidence for Sun readers (independent of their level of motive-based trust). Much of the reporting on misconduct between April 2007 and March 2010 pertained to the shooting of de Menezes, who police officers believed to be a potential terrorist, and the G20 protests. It might be speculated that this effect is explained by the police's seemingly 'tough' approach to threats to social order and potential terrorists, resonating with what Sun readers expect from police.
In summary, the hypothesis finds partial support. Fair treatment has a small positive effect on some readerships. The extent to which reporting on poor treatment has a negative effect on confidence depends on the level of motive-based trust. Effect sizes are small and only statistically significant in some of the readerships.

The third hypothesis states that reporting about police effectiveness should have a small positive impact on confidence. Across readerships, most reporting about police effectiveness has no statistically significant effect on confidence. A few regression coefficients are statistically significant, for example reporting that depicts the police as ineffective appears to have a positive impact on Sun readers, and coverage that is critical of the police organisation has a positive impact on Times readers. Overall, an inconsistent and inconclusive picture emerges. Interaction effects with motive-based trust have been tested, but do not change the picture.

It follows that the findings are also inconclusive with regard to the fourth hypothesis. It postulates that, based on the confidence model, we would expect the effect of newspaper coverage of police community engagement and procedural justice to be greater than the effect of reporting on police effectiveness. The study finds evidence for effects of reporting about engagement and procedural fairness on confidence in some readerships (sometimes conditional on motive-based trust), yet effect sizes are small and such reporting is rare. Less than 3% of articles on policing make reference to acts of police community engagement, less than 8% explicitly mention how members of the public have been treated at the hands of police officers.

In contrast, police effectiveness is frequently evaluated, yet reporting on the police's handling of a crime case or on the police organisation as a whole has no statistically significant effect in most readerships; the few statistically significant effects are small and produce an inconsistent and inconclusive picture.

Finally, the results provide evidence for an 'any publicity is good publicity' effect – higher intensity in policing coverage is associated with higher levels of confidence. Yet, with the exception of the Daily Mail readership, the effect ceases to be significant once the all other characteristics of media coverage considered in this analysis are taken into account[13].

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[13] Result of hierarchal model testing..

6. Summary, conclusions and implications

This study tested three main hypotheses emerging from the confidence model: (i) whether press reporting on community engagement has a positive effect on public confidence in the police; (ii) if reporting on the nature of police treatment in direct encounters affects public confidence in the police; and (iii) finally, whether reporting on police effectiveness in dealing with crime or reporting on police engagement and fair treatment has a stronger effect on confidence in the police. The empirical study combined a comprehensive content analysis of reporting on policing in five agenda setting newspapers with a large-scale population representative survey.

Over the studied three-year period from April 2007 to March 2010, media coverage of policing varied greatly. There were periods of high as well as low intensity of press coverage as well as sharp peaks caused by high profile events such as the 'cash for honours' investigation, the trial for misconduct in the shooting of Jean Charles de Menezes by police officers, the Sir Ian Blair scandals and resignation or the contested policing of the G20 protests. This variability in media coverage is not matched by co-variation in public confidence. Confidence was on a continuous trajectory of slight increase over the three-year period. Whereas the five newspapers differ in worldviews, political leaning and, as the analysis has shown, their coverage of policing, differences in confidence levels between newspaper readerships remained small throughout the three-year period. The public's confidence in the police is very stable and appears largely immune to the ups and downs of press reporting and does not follow the dividing lines of the newspapers they read. Pooled across three years, there is however enough variation in the confidence variable to draw some conclusions on the general patterns in the associations between press reporting and public confidence.

This study was designed to test the impact of reporting about police community engagement, procedural fairness and police effectiveness on public confidence in the police. The findings suggest that reporting on police effectiveness does

not have a statistically significant effect, whilst reporting on police community engagement and procedural fairness can have a statistically significant effect on public confidence - with four major qualifications. Firstly, the effect sizes are small. Secondly, reporting on community engagement and positive evaluations of procedural fairness are sparse – less than 3% of articles mention acts of community engagement and less than 1% explicitly mention police officers treating members of the public with dignity, fairness and respect. Incidents of police misconduct are rare but when they do occur, they get covered extensively. A total of 8% of press reporting mentions a case of police misconduct, 7% of articles explicitly mention members of the public being treated disrespectfully or unfairly at the hands of police officers. Reporting on engagement and fair treatment appears to be too infrequent to have a substantial effect on public confidence. And although most reporting is in relation to ongoing police investigations, there is no convincing evidence for an effect of evaluations of police effectiveness on trust. This might, at least in part, explain why this study keeps the tradition in media studies of finding little evidence for a media effect.

Third, the effect of reporting on community engagement and procedural fairness on public confidence is contingent on the level of motive-based trust. A note of caution is required here. Whilst the distinction between trust and confidence is conceptually useful, the empirical separation is less clear. It is often difficult to determine whether a survey measure is tapping into one or another (Siegrist 2010). In this study, there is a close analogy between several of the items that compromise the motive-based trust indicator and the definition of the 'poor treatment' code in the media analysis, this might be reflected in the observed interference of motive-based trust in the relationship between reporting on procedural fairness and public confidence in the police.

Fourth, the observed media effects differ between readerships and are not statistically significant in all of them. This might suggest that different readerships are affected by different types of events and affected differently by the same type of event. Mirror and Guardian readers are mostly affected by

reporting on police misconduct and poor treatment of citizens in direct encounters. In contrast, Sun reader's confidence in the police is not negatively affected by reporting on misconduct. On the contrary, it appears to enhance their confidence in the police doing a good job. At the same time, reporting on fair and respectful treatment and community engagement has, contingent on the level of motive-based trust, a confidence enhancing effect. Daily Mail readers differ from all others in that they are negatively affected by reporting on police community engagement. What emerges might be a reflection of the diversity of policing images that are held within the population. While levels of confidence in the police might be similar for different readerships, what the police mean to them might differ. The findings match at least the stereotypical ideas of newspaper readerships. The police might be a symbol of authoritarian values and the preservation of social order to Sun and Daily Mail readers, and within that frame of reference, reporting on misconduct might be interpreted as a sign of the police being 'tough' on potential terrorists (de Menezes) and 'hippie' protestors (G20) whilst police community engagement might be read as signal of 'too soft' policing or a signal of inclusion to groups some of the readers might not approve of. In contrast, Guardian readers might see the police as a guardian of civil society that respects civil rights and liberties. Their confidence in the police is shaken when these rights and liberties are violated by the police, for example by the tactics that the police used during the G20 protests, or the scandals that surrounded Sir Ian Blair. The quantitative data used in this study can only hint at such potential differences in police images. Qualitative research using in-depth interviews and ethnographic approaches are required to describe them appropriately (see for example the work of Girling, Loader and Sparks 2000, or Loader and Mulcahy 2003).

The study has a number of limitations. The media measures have been assigned to respondents based on self-reported newspaper readership. We cannot verify whether respondents actually did read the newspaper they reported to read, and even if they did, whether they read the articles that referred to policing. Furthermore, newspapers are only one source of information about the police and the study did not cover television, online media or other sources. Public

trust and confidence in the police are also bound up with the social meaning and cultural significance of the police that goes further and deeper than the legal mandate of catching criminals, protecting citizens and keeping law and order. The police are the 'civic guardians' of the community's 'moral architecture' (Loader and Mulcahy 2003), and people look to the police to typify and represent these moral values, and to defend and reassert them when they are perceived to come under threat. Perceptions of the area in which people live - anti-social behaviour, disorder and neglect, (lack of) social cohesion - have been found to be associated with trust and confidence in the police (Sunshine and Tyler 2003, Jackson and Sunshine 2007, Jackson et al. 2009, Jackson and Bradford 2009). We would thus expect that media images not only of the police but also of society at large might impact on public confidence in the police. The practical limitations of the study did not allow for an empirical test of this hypothesis. A further practical limitation is the comparatively short three-year period covered in this study. Public confidence has been very stable over the past five years, however, the picture looks different if we consider long-term developments. Both public confidence and media images of the police have undergone dramatic changes since World War II (Reiner 2010). Finally, the study suffers from the notorious difficulties inherent in media studies: the omnipresence of the media, the near-impossibility of isolating and disentangling media effects and following from that, the near-impossibility of attributing casual effects to media exposure. This type of study can also only pick up short-term effects and cumulative long-term effects go undetected (Livingstone 1996).

Some theoretical and practical conclusions can be drawn despite these limitations. Thus far, the confidence model has only been used to explain associations between perceptions of engagement, fairness and effectiveness and overall confidence within surveys. This is the first study that tests the confidence model with media data as well as survey data. The findings confirm that community engagement, procedural fairness and police effectiveness are distinct concepts and each contributes separately to public confidence in the police. Perhaps surprising is that procedural fairness which is evidently

important for people's experience of direct encounters with police (Skogan 2006, Tyler and Huo 2002, Bradford, Jackson and Stanko 2009) can, if only to a small extent, also be transmitted through press reporting. Police effectiveness lends itself most readily to media reporting, yet this does not appear to translate equally readily into changes in public confidence.

The practical implications for the police are evident. If the police want to demonstrate community engagement and procedural justice to those they do not come in direct contact with, the police have to seek ways of directly communicating with the public. And although newspapers give intense coverage to police investigations of crime cases, this reporting does not appear to affect public confidence. Reporting on police community engagement and procedural fairness has a small effect on some readers, yet the media do not cover these aspects of policing enough to influence confidence to a substantial degree in the wider population. This leaves ample space for the police to enhance public confidence by using direct means of communication – for example newsletters – to inform the public about how and in what ways they engage with the local community.

Acknowledgements

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CHAPTER 3:

THE EFFECTIVENESS OF POLICE COMMUNICATION

Hohl, K., Bradford, B. and Stanko, E. 2010. Influencing trust and confidence in the Metropolitan Police: results from an experiment testing the effect of leaflet-drops on public opinion. *British Journal of Criminology,* 50(3):491-513.

INFLUENCING TRUST AND CONFIDENCE IN THE LONDON METROPOLITAN POLICE

Results from an Experiment Testing the Effect of Leaflet Drops on Public Opinion

Katrin Hohl*, Ben Bradford and Elizabeth A. Stanko

Enhancing trust and confidence has moved to the centre of policing policy in England and Wales. The association between direct encounters with police officers and confidence in the police is well-established. But is it possible for the police to increase confidence among the general population including those people who do not routinely come into direct contact with police officers? This paper presents the findings from a quasi-randomised experiment conducted on population representative samples in seven London wards that assessed the impact of a leaflet drop on public perceptions of policing. The results provide strong evidence of an improvement in overall confidence, and in perceptions of police–community engagement, specifically. The leaflets also appear to have had a buffering effect against declines in public assessments of police effectiveness. The findings support the idea that public trust and confidence can be enhanced by direct police communication of this type.

Keywords: trust and confidence, police communication, quasi-randomized experiment

Introduction

Communication lies at the heart of any relationship between police and public. This is true on both an operational level and when considering the deeper relationships between police and policed. The reliance of the British police on the public—for information, for assistance and, in general, cooperation—means that effective and meaningful communication is vital if the activities of policing are to be in any way efficient or successful. Equally, communication from the police to the public about activities, strategies and objectives, constitutes a vital component of the democratic transparency of the police. But interaction between individual officers, the police organization and the public as individuals or as members of social groups is also suffused with meaning. The police as a public institution may represent—jointly or variously—social order, the nation, the state or the dominant social group (Girling *et al.* 2000; Jackson and Bradford 2009; Loader and Mulcahy 2003; Loader 2006; Reiner 2000; Tyler 1990; Waddington 1999). When communicating with the public, the police speak to people within these overarching social and political contexts. As Loader (2006: 211) reminds us, all police activities 'send small, routine, authoritative signals about societies' conflicts, cleavages and hierarchies, about whose claims are considered legitimate within it, about whose status identity is to be affirmed or denied as part of it'.

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These notions of the nature of police communication enjoin concepts of trust, confidence and legitimacy. 'Trust and confidence', a catch-all phrase within British debates around policing (Jackson and Sunshine 2007) condenses a range of possible viewpoints or orientations towards the police, such as with regard to people's understandings of police effectiveness, fairness and level of engagement with the public (Bradford *et al*. 2009; Jackson and Bradford in press). Implicit in the use of 'trust and confidence' is the idea that trust underlies and in part helps constitute the legitimacy of the police, in terms of its right to be recognized as authoritative over certain aspects of life (Habermas 1979) and in the perceived duty to defer to it and obey its commands (Sunshine and Tyler 2003*b*; Tyler 1990; Weber 1978).

Trust, confidence and legitimacy are then vital not only on normative or ethical grounds, but because they foster support and cooperation. The extent to which people have trust in the police and hold it to be legitimate will impact on their propensity to cooperate with, and defer to, officers across the whole range of policing activities. The procedural justice model developed by Tom Tyler and colleagues (Tyler 1990; 2006; Tyler and Huo 2002) proposes that trust and legitimacy are developed through and expressed by police activities—treating people with fairness, dignity and respect—that communicate to people shared group membership with the police. As 'proto-typical group representatives' (Sunshine and Tyler 2003*a*) police speak to individuals about their membership of, or exclusion from, nation, state or society, and do so in part by communicating shared values and priorities.

These conceptual relationships appear not to have gone unnoticed within the UK government (Home Office 2008): current academic and policy-oriented perspectives converge in stressing the importance of enhancing, or at least not damaging, trust in the police. This is, of course, particularly important in a system that still places great ideological emphasis on 'policing by consent' (Reiner 2000), and these issues have firmly inserted themselves in the performance management framework for the police in England and Wales. Trust and confidence, as measured in surveys such as the British Crime Survey (BCS) and the Metropolitan Police's Public Attitude Survey (PAS), became *the* core performance indicator of the police at both national and local levels in April 2009 (see Home Office n.d.). According to this measure, the key to better performance is confidence among the public as a whole.

The expectation of improving confidence that is embedded in the new target regime presents opportunities in terms of developing a less conflictual relationship between police and public. It has shifted debate on policing firmly into an arena in which the *connections* between police and policed take centre stage. Issues such as the role of the police as servants of the public and the need to align organizational and public priorities are emphasized to a far greater extent than was hitherto often the case. But the new regime also provides stiff challenges. The impact of personal encounters with police officers on public trust in police fairness and engagement specifically, and trust, confidence and legitimacy more generally, is widely evidenced (Bradford *et al*. 2009; Skogan 2006; Tyler and Fagan 2008). However, only relatively few people have direct contact with police on any regular basis. Ways will need to be found to 'reach out' to those who have little or no such contact and who, in terms of the procedural justice model, will be relatively distant from any personal experiences of fair treatment (although they may well be influenced by media reports and vicarious experiences). If public opinion is to become the key measure of performance, how are police to influence it in meaningful, and sustainable, ways?

This article addresses a practical development arising from evolving debates about British policing formed in the context of change in UK government policies over the past decade. Policing as a public service is now far more welded to its (or at least a) local base. In London in particular (where the experiment described here took place), Safer Neighbourhoods policing provides a dedicated team for each council ward. Driven by political pressure towards providing more 'service'-led, 'customer friendly' policing, one of the problems is how to 'tell'/'inform'/'demonstrate' police activities to a citizen audience that often has little contact with the service. Police are now required to think about how people—most of whom have little experience of the police—can feel confident in the 'citizen offer' of this public service.

It is within this context that the present study examines the potential of *direct* written communication between police and the general public for enhancing trust and confidence. What, if any, impact can such a form of telling—that is, a local newsletter—have on the way people feel about the police? We report the findings from a natural quasi-randomized experiment on a large, representative sample of people living in seven London wards carried out on behalf of the Metropolitan Police Service in Spring 2008. To anticipate the key findings, information provision that demonstrates engagement with local issues, and which reports back on operations initiated and conducted based on a shared understanding of the needs and priorities of local people can significantly improve public opinion. The study suggests that messages communicated to the wider public via newsletters can tap into the underlying structures and processes involved in lay assessments of 'engagement', particularly with regard to the communication of shared values and priorities. We conclude that effective and meaningful communication, in whatever form, is an important element of the formative processes that underpin legitimacy, trust and confidence in the police.

Communication, Legitimacy and Trust

Some recent approaches to legitimacy within political science correspond with the ideas of the procedural justice model by stressing the centrality of shared values (in the broadest sense of that term) in the proper understanding of legitimacy (Beetham 1991; Coicaud 2002; Sadurski 2008; cf. Tyler 1990; 2006; Tyler and Huo 2002). Many of these accounts emphasize that the justification of legitimacy does not reside in the (legitimized) authority itself, but rather in its intended subjects or, perhaps more correctly, in actors' perceptions of the directives that issue from the authority (although see Barker (2001) for an opposing view that stresses the importance of the actions of authorities in legitimating themselves, an idea of obvious relevance in the present context). For an authority such as the police to be considered properly legitimate and worthy of deference, those subject to it must see in its directives—and its communications—a reflection of their own values, principles and priorities. Of course, such value alignment is not the only component of, or justification for, legitimacy. Legal validity—the adherence to commonly recognized rules (Beetham 1991) and what might be termed 'output' validity—the ability of an authority to actually produce the desired outcomes that go along with its remit, are also important aspects of legitimacy (Habermas 1976; 1979).

For some people and social groups, justifications for police legitimacy are likely to be reflected in and by aspects of those dominant 'structures of feeling' (Williams 1964; cf. Loader and Mulcahy 2003) that still link the police and public in an almost 'mythical'

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way (Reiner 2000). In such cases, the mere existence and activity of the police, as long as it is directed against the criminal other, may often be enough justification for its continued legitimacy. In contrast, among those designated *as* that criminal other, or among other marginalized or stigmatized groups, relationships with the police may operate under quite different structures of feeling, wherein any link between police and public has been definitively broken. However, between these extremes is a wide middle ground within which agreeing on shared values, principles and priorities is an interactive process that requires communication, negotiation and, for the police, the transmission of messages that it and the public are, in effect, on 'the same side'. Likewise, to the extent that legal and output validity are important to police legitimacy, these must also be communicated in some way.

Such messages are also key components of trust relationships. Indeed, individual's trust judgments about the police are likely to be key influences on the legitimacy they grant to it (Bradford and Jackson 2010). Public trust in the police is bound up in the relationships between police and people, which, following Barber (1983), we suggest will involve three important elements and expectations: that officers will behave in certain ways in certain circumstances (based on a shared understanding of what proper behaviour is in a specific situation); that police are technically competent in the roles assigned to them; and that officers will carry out their duties such that they place the interests of others above their own. For Barber, such trust rests on a shared understanding about the nature and trajectory of the social world, to which actions of the trustee are expected to conform. Similarly, Goldsmith (2005) links trust in the police to Six's (2003) dimensions of trustworthiness: ability, benevolence, dedication and ethics. With regard to the relationship between police and public, these constitutive aspects of trust cannot be taken for granted but must, again, be demonstrated as part of the on-going, communicative process.

Differentiating between public perceptions of—or trust in—police effectiveness, community engagement and fairness therefore allows us to tap into many of the ideas and orientations thought to underlie both trust and legitimacy (Bradford *et al.* 2009; Jackson and Bradford in press; Stanko and Bradford 2009). Communication—of whatever type—between police and public will contain messages relating to the trustworthiness of the police across all three aspects, but evidence collected under the procedural justice model and elsewhere suggests that the most powerful and convincing example of such communication is through action and face-to-face *interaction*. If officers treat people fairly and decently, and use proper procedures, this can communicate shared values and shared group membership, and legitimacy and trust can be enhanced (Tyler and Fagan 2008; Tyler and Huo 2002; Sunshine and Tyler 2003*a*; 2003*b*). Of course, on many occasions, the police act in other ways, and communicate exactly the opposite message, one of exclusion, difference and confrontation (Brunson 2007; Carr *et al.* 2007; McAra and McVie 2005; Stoutland 2001; Waddington 1999).

But the question raised above remains—what of those who do not have (recent) contact with the police? The police are now being asked to influence trust and/or legitimacy across the *entire* population, including those with whom they have little face-to-face interaction, and whose attitude formation thus relies on other sources, including, perhaps, what they have learned from others, reinforced through a wide range of fictional and non-fictional media accounts. The police must demonstrate awareness of

and sympathy with the values and priorities of the public as a whole. Furthermore, because trust is part of a social *relationship*, acts of communication need to demonstrate engagement between the parties involved and constitute one part of an iterative process through which police learn from the public as well as demonstrate the things that make it worthy of trust. Although police currently 'communicate' with the public through their own 'news' about operations and crime prevention literature, little of this has to do with the very local contexts within which people experience crime and disorder, nor is it targeted towards what people are most concerned about. Finally, we cannot ignore the possibility of interactions between the effects of the media on public opinion and how people experience policing in their local area; the analysis presented below includes consideration of the possible effects of predominant media stories about the police at the time the experiment took place.

Style and Content of Communication: Normative and Practical Considerations

Previous Home Office (Chapman *et al.* 2002; Salisbury 2004) and Ministry of Justice (Singer and Cooper 2008) research has demonstrated that the provision of information to members of the public may have an effect on their confidence in the criminal justice system. Salisbury (2004) found that the provision to British Crime Survey (BCS) respondents of a booklet containing a number of relevant facts, for example pertaining to the proportion of all crime involving violence and the proportion of custodial sentences handed down to rapists and burglars, both improved knowledge of the criminal justice system among those receiving it and appeared to be linked to higher levels of confidence. Singer and Cooper (2008) report the results of a randomized control trial that demonstrated that levels of confidence in the effectiveness of the criminal justice system in bringing offenders to justice was higher in the experimental group (who received a similar booklet) than in the control group (who did not).

This earlier work started from a somewhat different premise from that informing the quasi-experiment reported here. Both Home Office and Ministry of Justice projects had at their heart the idea that the public is misinformed about crime and the criminal justice system, and that this is linked directly to lower levels of confidence: if levels of knowledge and awareness can be improved, uplift in trust and confidence should result. The disconnect between public ideas about crime, policing and the courts, and the 'reality' experienced by criminal justice professionals is, of course, well known, and it is certainly the case that the public can be seriously wrong in its beliefs about these topics (Roberts and Hough 2005). However, a project that simply aimed to 're-educate' people about the reality of crime and policing in their local area, especially one initiated and implemented by the police, seems likely to run into a number of difficulties. On a very basic level, it is unlikely local residents would react well to an assertion that levels of crime and disorder in their area are in fact very different from those that they themselves may perceive. But, more fundamentally, the classic articulation of police with state and class power (Choongh 1997; Waddington 1999) has significant implications for the type of communication reported here, as it does for any police–public interaction. Direct communication between police and public occurs within a broader social context that implies, among other things, a fundamental power imbalance between police and policed. For many people, 'the police' are a distant, almost taboo object (Smith 2007), while, for others, policing is a coercive, even threatening presence in their everyday

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lives. Newsletters and similar devices run the risk not only of appearing to the public as missives from a remote power, but actually being so, for example if they are produced in an non-reflexive manner intended simply to correct 'erroneous' ideas and that does not take into account local concerns and priorities.

Intended in part to address such concerns, some scholars have pointed to the relevance to policing of the four validity claims inherent in the 'ideal speech' situations theorized by Habermas (Loader 1996; Mawby 2002). These ideas have the potential to alleviate some of the power imbalances between police and policed and place police–public interaction (or communication) on a more equitable basis. In the ideal speech situation, in which all sides have an equal opportunity to express and defend their views, there is an implicit assumption that all speakers can make and justify four claims about what they are saying: that it is comprehensible, that it is truthful, that it is correct in context, and that it is sincere (Mawby 2002: 69; cf. Outhwaite 1994). This set of claims can be used as basic principles informing the nature and content of communication between police and public, including newsletters of the type discussed here. Furthermore, an ability to answer the questions such claims invite—'What do you mean?', 'Is what you say true?', 'Are you entitled to say that?' and 'Do you really mean it?' (Outhwaite 1994: 40)—will also be vital if trust and legitimacy in the senses outlined above are to be influenced in a positive manner. People will quickly see through any police communication that addresses events in their local area that cannot, at least implicitly, answer these questions.

While police–public communication is not and can never be an ideal speech situation, the four validity claims outline both a normative and an explanatory understanding that provides a route through the difficulties inherent in the experiment described here. They should also underpin any attempts to either replicate the experiment or apply its results in a more general way. A carefully ethical approach is especially necessary as the police face the challenges of an increasingly media-dominated public sphere, within which the police increasingly move from being simply the object of news stories (for example) towards being 'mediators' themselves (Mawby 2002; Wright 2000). In sum:

. . . there is an organisational need for the police to communicate effectively and to construct and communicate an image appropriate to their role, as one aspect of the legitimation process. (But) it is also crucial for legitimacy that there is a concern not simply with appearance, or with the strategic management of impressions (Goffman 1959: 90), but with substance, aligning image management with transparency and accountability. (Mawby 2002: 72)

As part of the broader project of which the experiment described here was part, the Metropolitan Police Service (MPS) developed a 'good practice' model of police communication in an attempt to address some of these issues (Wünsch and Hohl 2009). Based on the findings from a series of focus groups, interviews and surveys carried out in London, the model condenses key findings regarding public perceptions and needs concerning information from and about the police in general, and the MPS website and local policing newsletters in particular, into a set of five good practice principles of police communication. First, study participants expressed a need to receive more information about crime and policing directly from police (not only through other sources, like, for example, the media). Newsletters thus need to be instantly recognizable as coming directly from the police. Second, newsletters need to pertain to the immediate local area. One of the key findings of the studies is that information about local crime

and disorder issues and what the police are doing about them carries the most meaning and relevance. This pertains to the third point: knowing that the police are aware of local problems and are tackling them is perceived as reassuring. Fourth, newsletters should help in making the police more accessible, such as by providing clear details about how to get in touch with the local police team. Finally, the writing style should be professional but remain simple and approachable, avoiding police jargon and technical terms. It is important for police communication to be perceived as inclusive of and directed to everyone.

The pros and cons of using newsletters to attempt to influence public opinion seem straightforward. On one hand, they allow police to control fully the content of messages going, potentially, to all people living in a given area, and can further be tailored to suit local conditions, situations and priorities. But, equally, leaflets are 'weak treatments'. There is no certainty over how many will be read, what messages will be taken from them or how long contents will remain in people's minds. After a summary, below, of the research questions that structure our analysis, we turn to describing the experiment that tested the effect of a newsletter drop on public confidence and perceptions of the police.

Research Questions

Our intention here is to concentrate on the possibility of police communicating directly with the public and, in doing so, enhance trust and confidence. Four questions guide this study:

(1) Can police communication via newsletters be linked to improvements in its engagement with people's priorities? Engagement is a key component in securing trust and legitimacy, and we test whether leaflets are an effective device in demonstrating this to the wider public.
(2) Does the newsletter influence the second main driver of public confidence—police effectiveness? The newsletter reports successes in addressing local crime and disorder issues, and we test whether learning 'second-hand' about successes can enhance perceptions of effectiveness.
(3) Does the newsletter influence people's understanding of how police would act in personal encounters, namely fairness? Tacit expectations of police fairness are key elements underlying legitimacy, trust and confidence and this is likely to be the case whether people have had recent personal contact or not. We test whether the newsletter works as a device to communicate that the police are respectful, fair and helpful.
(4) And, finally, does newsletter communication enhance overall confidence in the police?

Research Design, Data and Method of Analysis

To answer these research questions, a quasi-randomized experiment was conducted in London in Spring 2008. To give a brief orientation of the experimental set-up before describing it in greater detail, the design included a test group of wards that received a newsletter and a control group of wards that did not receive a newsletter. Within both

groups of wards, respondents were randomly split into a before (the newsletter dissemination) and an after group.

At the core of the experiment was the delivery of 17,117 newsletters to all households in three electoral wards in London. The newsletter dissemination is the 'intervention' or treatment in the quasi-randomized experiment. Each ward received a newsletter tailored to their local area; the content and layout were designed based on the five good practice principles (Wünsch and Hohl 2009) outlined above. Accordingly, the newsletter reported what the local police team had done to find out about the concerns of local people (e.g. carried out surveys or held public meetings), attempted to demonstrate that the police understand the issues raised by local people (by reporting these and sharing these with all households on the ward) and, finally, reported the action the police had taken in response to these problems and how successful the action had been (e.g. a successful operation against drug dealing on a particular estate, in response to concerns raised by local residents). In sum, the aim of the newsletter was not to 'educate' the public about crime, but to inform people about what the police were actually doing locally.

In order to measure the effect of the newsletter, the day of the newsletter dissemination was chosen to fall into the fieldwork period of the 2008 Safer Neighbourhoods Survey (SNS) commissioned by the Metropolitan Police Service and administered to a random sample representative of residents (aged 16 and over) of seven electoral wards in London (including the three wards that received the localized newsletter). The survey asks a range of questions, including measures of confidence in the police, perceptions of crime and disorder, attitudes towards and contact with the police, victimization and the fear of crime. A total of 2,836 face-to-face interviews were carried out between 1 May and 31 July 2008. All newsletters were disseminated on the same day halfway through the fieldwork, 10 June 2008.

Since respondents were allocated random interview dates within the survey period, the day of the newsletter drop divides the sample into two (random)halves, thereby creating a quasi-randomized experiment. The randomization effectively controls for all differences—other than the newsletter drop—between the respondents interviewed before and the respondents interviewed after the day of the newsletter drop. Any statistically significant differences in the responses given by respondents interviewed before and after the day of the newsletter drop can therefore be expected to be due to something that happened on the day of the leaflet drop. A control group was also included in the analysis, namely interviewees residing in the four other wards covered by the SNS survey that did not receive a newsletter during the fieldwork period. The control wards allow us to measure and control for potentially confounding effects from events coinciding with the newsletter dropping (such as local or national media reports concerning the police, crime or some other relevant factor).

Naturally, this will not have been the first time many respondents to the survey received a newsletter or similar communication from the police. The test as well as the control wards included in the study are spread across London and were selected to represent a wide range of past and current newsletter practice and experience. They are diverse with regard to age structure, ethnicity, employment status and the percentage of respondents that had had contact with police and/or had been a victim of crime within the last year. Table 1 gives an overview of the structure of the sample.

TABLE 1   *Description of the sample: socio-demographic make-up by ward*

	Test wards			Control wards				Summary	
	Bethnal Green North	Canning Town South	Upper Edmonton	Kenton West	Mayesbrook	New Cross	Roehampton	Test wards	Control wards
Percentages (%)									
Women	54	59	57	52	57	55	62	56	56
Age									
15–17	3	4	2	3	2	3	2	3	3
18–21	5	5	4	5	5	4	7	5	5
22–34	37	30	26	19	23	31	28	31	25
35–44	20	21	21	19	19	25	16	21	20
45–54	10	13	19	16	16	17	11	14	15
55–64	9	12	11	15	13	10	11	11	12
65+	16	14	17	24	22	9	24	16	20
Ethnic group									
White British/Irish/other	60	61	46	37	78	42	70	56	57
Mixed	1	2	2	1	2	4	1	2	2
Indian	1	1	4	45	2	2	1	2	12
Pakistani/Bangladeshi	27	8	2	2	1	1	3	12	2
Caribbean	3	6	16	4	4	18	7	8	8
African	3	16	15	2	10	21	6	11	10
Other ethnic group	5	5	15	8	3	12	11	8	8
Employment status									
Full-time	41	40	39	45	38	47	34	40	41
Part-time	7	8	9	9	6	7	9	8	8
Unemployed	4	5	7	2	4	5	4	5	4
Economically inactive	37	39	37	35	43	28	41	38	37
Student	8	7	5	6	6	9	9	7	8
Other	3	1	2	3	2	3	2	2	3
Car owner	36	55	63	83	63	47	44	51	59
Limiting disability	15	14	15	12	21	12	17	15	15
Victim of crime	15	17	16	9	18	13	12	16	13
Contact with police	24	26	23	19	25	29	18	24	23
Ward deprivation level									
(IMD score) (numbers)*	49	55	37	11	32	35	32	47	27

Total sample size = 2,830. Unweighted data.

*Index of Multiple Deprivation (IMD) score 2004, higher values = greater deprivation.

Source: London Metropolitan Police Safer Neighbourhoods Survey 2008.

Once grouped together, the group of test wards has almost the same socio-demographic make-up as the group of control wards, with the exception that the test wards are more deprived than the control wards. In order to rule out the possibility of differences in the demographic, social, economic make-up or any other characteristics of the wards accounting for the 'newsletter' effect, we control for all systematic differences between test and control wards prior to the newsletter drop within the statistical analysis. This requires making the important assumption that if exterior factors intruded on the day of the letter drop (e.g. media reports), control and test wards were affected in the same way and by the same coinciding events. The geographical spread and socio-demographic diversity of the wards within the group of control wards and within the group of test wards strengthens the research design, as it renders the possibility of coinciding events that occurred only on the test wards or only on the control wards unlikely (far more likely would be 'London-wide' events that affected all respondents in some way).

The effect of the newsletter drop, then, can be found in the 'difference between the difference', namely the difference between the before and after groups on the test wards minus the difference between before and after groups in the control wards. We use multivariate linear regression to estimate and formally test the statistical significance of the newsletter drop based on these group comparisons. In this way, we can rule out any alternative explanations and be fairly confident that any observed effect can be attributed to the newsletter.

Measures

We analyse the effect of the newsletter on the following set of dependent variables.

Confidence in local area policing

We use the standard BCS measure of confidence in local area policing. Respondents are asked to indicate on a five-point scale, ranging from 1 = 'very poor' to 5 = 'excellent' how good a job do you think the police are doing in their local area. This question reflects an 'overall' public confidence that police forces are now expected to influence in a positive way.

We also drill down deeper into public opinions of the police. Previous work on the PAS and other data has suggested that opinions about the level of police engagement with the public, the fairness of the police when dealing with people and police effectiveness are strongly related yet distinct components of trust and confidence (Bradford *et al.* 2008; 2009). For the present study, it is particularly important to analyse these components separately. The newsletter was designed to convey how the local police team engages with the local community and successfully deals with the concerns raised by local people. It is thus part of the research question to test whether informing the public is a way of engaging with the public; whether such communication can change perceptions of the way the police treat people (despite the indirectness of the newsletter medium); and whether the provision of information can influence perceptions of how effective the police are in actually protecting the public and fighting crime.

The survey measures the three components of trust and confidence in the police (engagement, fairness and effectiveness) with several items. A short description of the items is given below; the original survey questions are provided in the Appendix. Based

on a set of items for each component, we estimate a separate one-factor model for the three components using maximum likelihood estimation and, based on the factor loadings, calculate factor scores via the Bartlett method of regression.

Police community engagement

The score is based on four items. Respondents rated on a five-point scale to what extent they feel the police listen to the concerns of the local people, understand the issues that affect the community, are dealing with things that matter to the community and, finally, can be relied upon to be there when you need them.

Police fairness

Using the same five-point agreement scale, respondents rated the extent to which they felt that: the police treat everyone fairly regardless of who they are; would treat the respondent with respect if they had contact with them for any reason; are friendly and approachable; and are helpful.

Police effectiveness

Respondents rated how well the police were doing in tackling gun crime, supporting victims and witnesses, policing major events in London, tackling dangerous driving and responding to emergencies promptly.

Two further measures were also included in the analysis. The first (feeling informed) was used to double-check that the newsletter drop actually had some impact on respondents' awareness of the local police. The second (police contact) was used as a control in the regression analyses. Although the quasi-random experimental design means that control variables are not strictly necessary (since the random sampling means that contact experiences with the police should be spread evenly through the before and after groups), including satisfaction with police face-to-face encounters in the models allows direct comparison of these two different forms of 'contact' (see results section below).

Feeling informed

Respondents were asked how well they feel informed about what the police are doing locally. Responses were dichotomized by collapsing the response options 'fairly well' and 'very well' into one category and keeping the third option, 'not at all informed', as the baseline category.

Police contact

In the regression analysis, we control for recent contact with police. Respondents who report having had police contact within the last 12 months are asked to evaluate their satisfaction with the most recent contact on a seven-point scale ranging from 1 = 'completely satisfied' to 7 = 'completely dissatisfied'. For the analysis, we collapse the response categories into 0 = 'no contact', 1 = 'satisfactory contact' and 2 = 'unsatisfactory contact'.

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The linear regression models predicting the newsletter effect on each of these dependent variables are simple. The only explanatory variables in the model are a dummy variable controlling for all systematic differences between test and control wards prior to the newsletter dropping and the key variables of interest, namely dummy variables estimating the difference between before and after groups on the test and the control wards, respectively. The quasi-random allocation of respondents to the before and after groups effectively breaks the link between the two dummy variables and all potentially confounding variables. This means it is not necessary to control for any further variables in the model (such as socio-demographics or victimization) to obtain a valid, unconfounded estimate of the newsletter effect.

Results

Before the leaflet drop, 38 per cent of the respondents on test and control wards felt informed about what the police are doing in the local area. After the leaflet drop, this percentage increased to 49 per cent on the test wards, and, as expected, remained unchanged (at 37 per cent) on the control wards where no leaflets have been distributed. This finding provides evidence that key elements of our experiment worked: there is an immediate effect of the leaflet drop on how informed respondents feel about local policing on the test wards, and there is no statistically significant difference in comparison to and within the control group.

Table 2 reports the mean levels of confidence, perceived police community engagement, effectiveness and fairness in the control and test wards before and after the leaflet drop, and the p-values of the t-tests. Prior to the leaflet drop, respondents on test wards reported, on average, significantly lower levels of confidence and had significantly less favourable views of police community engagement and police fairness than respondents on the control wards. After the leaflet drop, public perceptions of

TABLE 2   *Mean levels of confidence, perceived police community engagement effectiveness and fairness before and after the intervention*

Means	Test wards		Control wards	
	Before	After	Before	After
Confidence	3.126	3.294	3.412	3.353
Police community engagement	−0.233	0.061	0.041	0.057
Police effectiveness	0.217	0.076	0.118	−0.299
Police fairness	−0.113	0.016	0.080	−0.016
P-values	*Confidence*	*Engagement*	*Effectiveness*	*Fairness*
Within test wards: before vs after	0.002	<0.001	0.051	0.073
With control wards: before vs after	0.183	0.786	<0.001	0.105
Before: test vs control wards	<0.001	<0.001	0.172	0.006
After: test vs control wards	0.198	0.941	<0.001	0.601

High scores = more favourable options. Total sample size = 2,830. Unweighted data.

Confidence min. = 1, max. = 5, range = 5, mean = 3.12, SD = 0.89.

Engagement min. = −3.20, max. = 1.93, range = 5.12, mean = 0.00, SD = 1.05.

Effectiveness min. = −3.07, max. = 2.22, range = 5.29, mean = 0.00, SD = 1.07.

Fairness min. = −4.13, max. = 1.88, range = 6.01, mean = 0.00, SD = 1.09.

Source: London Metropolitan Police Safer Neighbourhoods Survey 2008.

policing were no longer significantly less favourable on the test wards, and perceived police effectiveness significantly higher on the test than on the control wards. This simple comparison of means suggests a significant positive effect of the newsletter on all four measures of public perception of policing. The four regression models reported in Table 3 estimate this effect of the leaflet drop on the four measures, controlling for the all initial differences between the test and the control wards.

As outlined above, the leaflet reported on what local police had done to find out about the priorities and needs of the local community, the activities they carried out to address local problems and what was achieved. The size and statistical significance of the regression coefficients suggest the leaflet was effective in communicating engagement with local concerns. On the test wards, perceptions of community engagement improved substantively after the leaflet drop. This improvement is likely to be a direct response to the leaflet, since no such statistically significant change occurred on the control wards where no leaflets were disseminated.

Based on this study design, we cannot tell whether this effect is attributable to the contents of the leaflet, the very act of disseminating it or whether a combination of both communicated engagement to the respondents so effectively. The leaflet dissemination may in itself be perceived as an act of showing the police as accountable to the public and are telling people proactively what they are doing locally and why. Disentangling the effects of the literal content from the act of communication itself would require a comparison of the leaflet effect observed here to that of a leaflet that did not indicate police engagement with local concerns, such as one designed to 'educate' the public about crime rates or crime prevention instead. This was beyond the scope of the study described here.

After the day of the leaflet drop, the effectiveness of the police in fulfilling their key roles was perceived significantly less favourably in both test and control wards. But this change was significantly greater in the control wards where no leaflets were disseminated. To understand how the leaflet may have affected people's perceptions of policing, it is important to know what public debate on London policing was happening at the same time as the leaflet was delivered. Because of the quasi-randomization, we did not expect to observe any statistically significant effect in the control wards *unless* something happened around the day of the leaflet drop. To investigate this, we conducted an analysis of all newspaper articles mentioning the Metropolitan Police anywhere in the text published in 11 major newspapers on the day of or shortly after the leaflet drop, 10 June 2008.[1] Two topics featured prominently in these articles: accusations of racism within the Metropolitan Police organization, in particular against the then Commissioner Sir Ian Blair (mentioned in 46 articles), and the rise of knife crimes and fatal stabbings amongst teenage gang members in London (mentioned in 35 articles) dominated the headlines. Although other explanations can not be excluded, the intense media coverage of these events provides a plausible explanation of the significantly less favourable views of the police effectiveness in performing their job. The police may have appeared less

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[1] The analysis included all 294 newspaper articles containing the words 'Metropolitan Police' published between 8 June and 10 July in the following newspapers: *Daily Mail* and *Mail on Sunday* (49 articles), News International Newspapers Information Services Ltd (10 articles), *The Daily Telegraph* (39 articles), *The London Evening Standard* (68 articles), *The Express* Newspapers (2 articles), *The Guardian* (32 articles), *The Independent* (23 articles), *The Mirror* and *The Sunday Mirror* (14 articles), *The Observer* (6 articles), *The Sunday Express* (4 articles), and *The Times* and *The Sunday Times* (47 articles).

TABLE 3   *Linear regression model predicting scores for overall confidence, perceptions of police effectiveness, fairness and engagement*

Dependent variable:	Model 1	Model 2	Model 3	Model 4
	Engagement	Effectiveness	Fairness	Confidence
	Coeff. (95% C.I.)	Coeff. (95% C.I.)	Coeff. (95% C.I.)	Coeff. (95% C.I.)
Explanatory variables				
Within test wards				
After the intervention (ref.: before)	0.219** (0.09; 0.35)	–0.184** (–0.32; –0.05)	0.0629 (–0.07; 0.19)	0.118* (0.02; 0.22)
Within control wards				
After the intervention (ref.: before)	0.013 (–0.10; 0.13)	–0.415*** (–0.53; –0.30)	–0.088 (–0.20; 0.03)	–0.055 (–0.14; 0.03)
Police contact (ref.: no contact)				
– Satisfactory contact	0.010 (–0.10; 0.12)	–0.042 (–0.16; 0.07)	0.095 (-0.02; 0.21)	0.043 (–0.04; 0.13)
– Unsatisfactory contact	–1.290*** (–1.46; –1.11)	–0.887*** (–1.07; –0.70)	–1.190*** (–1.37; –1.01)	–0.971*** (–1.11; –0.83)
Initial ward difference				
Control ward (ref.: test ward)	0.211** (0.08; 0.34)	–0.138* (–0.27; 0.00)	0.131* (0.00; 0.26)	0.235*** (0.14; 0.33)
Constant	–0.098	0.311***	–0.008	3.220***
Adjusted R^2	8.0%	7.4%	9.4%	7.4%

High scores = more favourable opinions. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Total sample size = 2,830. Unweighted data.

Source: London Metropolitan Police Safer Neighbourhoods Survey 2008.

effective in stopping a spate of killings among teenagers, whilst they were simultaneously viewed as unable to keep their 'house in order' and indulging in 'petty' organizational in-fighting.

Against this backdrop, the significantly smaller decline in opinions about effectiveness in the test wards suggests that the leaflet might have had a 'buffering effect' against the messages respondents were receiving from the media. The reports on community engagement and successful local area policing contained in the leaflet appear to have compensated (at least in part) for the negative effect of a media focus on current events. Clearly, the positive effect of the leaflet on perceptions of engagement and effectiveness must be understood as a multiplier effect of *actual* engagement and *actual* police activity carried out in the ward. Communication is effective in as much as it accompanies, but not substitutes, action.

Perceptions of police fairness, politeness and helpfulness in personal encounters were least affected by current events and not apparently affected by the leaflet communication. We observed no statistically significant effect on the test wards following the leaflet drop, and neither was there evidence of coinciding events having had an impact. On the face of it, this appears to be because this is the 'component' of confidence most likely to be influenced by personal (or vicarious) experience—precisely what the newsletter cannot offer (and note the large negative effect of personal contact on perceptions of fairness). Returning to the impact of current events on perceptions, the coinciding events did not appear to have a statistically significant effect on perceptions of police fairness (despite the amount of publicity given to the alleged racism inside the organization) or engagement.

In summary, there is strong evidence that the leaflet drop had a substantial positive effect on perceptions of engagement and a buffering effect on respondents' belief in police effectiveness when it was challenged by current events; however, the leaflet had no measurable effect on tacit expectations of police fairness, decency and helpfulness in personal encounters. Each of three components of confidence was affected differently (or in the case of fairness, not at all) by the leaflet drop and the events that coincided with it. For these Londoners at least, opinions of the police really are multi-faceted (Bradford *et al.* 2008; 2009) and some aspects appear to be more open to influence and challenge than others.

The media analysis and the observed significant worsening in perceptions of police effectiveness on the control wards provide evidence for the presence and impact of events coinciding with the newsletter dissemination. These findings raise the question as to whether the impact of coinciding events constitutes a threat to the validity of our conclusions. In this regard, the quasi-randomized design of the experiment is a strong guard against erroneously interpreting the impact of coinciding events or confounding factors as an effect of the newsletters. If changes in opinion arose from other events, or an interaction between these events and the reception of the newsletter, these events would need to have occurred in or have affected the test wards only, and not the control wards. Since both control and test wards are spread across London, this seems rather unlikely. The evidence that it did affect opinions is very strong.

It is theoretically possible that the observed effect of the newsletter is the product of an interaction between the newsletter and other developments, such as those outlined in the section on concurrent media stories above. If this was the case, two conclusions

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would necessarily follow. The first is that the newsletter must have a non-zero effect so as to produce the significant effect observed on the test wards. If the unique effect of the newsletter net other developments was zero, any hypothesized interaction effect that involved it would also be zero. Given the joint effect of coinciding events as measured on the control sites is *negative*, the second implication is that the effect of the newsletter must not only be non-zero, but must be positive and interact with the coinciding events in some way that reverses an initially negative effect into a positive effect as to produce the observed positive overall effect. In sum, neither the presence of other developments nor the possibility of them interacting with the newsletter changes the conclusion that the newsletter had a positive effect on perceptions of policing.

The final question is to address whether the newsletter had an effect on overall confidence in the police. The results suggest that while the events at the time of the leaflet drop did not have a statistically significant effect on confidence (evidenced in the absence of a significant change on the control wards), the newsletter did have a significant effect on overall confidence. The increase in overall confidence following this one-off leaflet drop is considerable and parallels the improved perceptions of community engagement.

The analysis of the leaflet drop experiment also yields a noteworthy finding in relation to the effect of different forms of police encounters (or communication) on confidence. The regression analyses (Table 3) show that recent unsatisfactory contact with officers has a sizeable negative effect on respondents' perception of police fairness, effectiveness, engagement and respondents' overall confidence in the police. This finding is not particularly ground-breaking in itself; it is the reliably replicated outcome of virtually all empirical studies of encounters with the police (Skogan 2006; Walker *et al.* 2009; Bradford *et al.* 2009). But it is interesting in light of the effect of the leaflet drop. Whilst the face-to-face encounters experienced by relatively few members of the public have overall strongly negative impacts on confidence (although positive encounters can have a positive effect, this is usually dwarfed by the much larger negative impact of negative experiences—Skogan 2006), indirect, impersonal encounters via direct communication to the wider public appear to be confidence-*enhancing*.

It seems, then, that personal and impersonal encounters differ in how much and in which direction they can influence confidence. The public do appear to be receptive to positive messages about police engagement and effectiveness via direct communication, although the size of the confidence-enhancing impact of this impersonal encounter is smaller than the impact of personal encounters. The findings may also indicate that that the messages people receive via newsletters of the tailored type described here differ from, and are potentially inconsistent with, those people receive during personal encounters with officers. At the very least, it may be much easier to communicate positive messages via written, thought-through communications than in the situations that typically bring about face-to-face encounters. This is a hypothesis to be explored in the future, since it goes beyond what can be gleaned from these data.

Discussion

From a police policy perspective, the experiment described here was a resounding success. It demonstrated that overall confidence, as well as public opinion about police community engagement and effectiveness could be influenced in a positive manner by

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the use of leaflets targeted towards sharing local people's priorities and demonstrating police responses to them. In terms of our original research questions only the third, addressing the potential impact of the newsletter on opinion of police fairness, could not be answered in the positive. As noted above, this is probably not surprising, since this is the component of confidence that appears to be most strongly related to personal or vicarious experience, rather than assessments of police performance made in other ways.

Current police performance—as measured by the single overarching indicator of 'public confidence'—taps into the views of the whole population and not just those who come into direct contact with the police. 'Improving' general public opinion may appear to be an unattainable goal to some inside, and indeed outside, the police service. In particular, there seems to be a common notion that any police communication effort is dwarfed or even nullified by the allegedly paramount influence of the media that fuels fear of crime and undermines public confidence in the police. Notwithstanding this, the newsletter experiment described here demonstrates that it is possible for police to communicate effectively with many people in local areas and foster more positive attitudes about policing among them.

The most important finding was perhaps that the newsletter had a significant impact on views about police community engagement, namely assessments of the extent to which police recognize, understand and act on the public's priorities, which can also be seen as opinions concerning whether police share the values and priorities of those they police (on which local issues should be addressed, for example). Assessments of the extent to which local police engage with the community have been shown to be the most important aspect of 'overall' trust and confidence (Jackson and Bradford in press; Stanko and Bradford 2009). The correspondence in the test wards between change in the community engagement and overall confidence measures appears to reaffirm this idea: impressions of effectiveness fell, and ideas about fairness where unchanged, but overall confidence increased in a very similar way to ratings of engagement. This finding underlines that while the effectiveness of the police is clearly an important element of its overall performance, and in the trust judgments of the public, when people are asked 'how good a job' their local police are doing, they place most emphasis on their assessment of the extent to which police listen, understand and act on their concerns.

Direct written communication may then constitute an important way in which police can communicate shared values. Lay assessments of the extent to which institutions share and express the values most important to the public are held to be central to the legitimacy granted to them (Beetham 1991). A key factor informing the idea that authorities such as the police should be deferred to and obeyed is a sense that those authorities hold to and by a shared ethical and moral framework. But how do people 'know' that the values of the police are aligned with their own? The experience of fair and decent treatment during interactions with officers is one way in which shared values can be inferred and, indeed, demonstrated (Tyler 1990; 2006; Tyler and Huo 2002). On the basis of this experimental evidence, it appears that another is police communication that demonstrates an awareness of what issues are important and, crucially, action on those issues. It does not seem too strong a claim, then, to infer that direct written communication of the type described here is then a way in which the police can enhance, or at least re-affirm, its legitimacy.

Although opinions of police effectiveness fell in the test wards, that they fell by less than in the control wards suggests that the leaflet also seems to have communicated a

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certain sense of police competence: the ability to 'do the job' that is also a key element of both legitimacy and trust. Although, as noted, we cannot be sure people actually read the leaflets provided to them, the buffering effect on opinions in the test wards can at least provisionally be attributed to the information in the leaflets concerning what the police actually did about the problems local people had identified. Further, a certain overlap between engagement and effectiveness is also implied. *Acting on* public concerns—rather than simply listening to them—may be an important way in which police communicate community engagement. Such linkages serve as a reminder that while 'components' of trust, such as those labelled here engagement and effectiveness, may be distinct constructs, they are also interrelated, and positive (or negative) perceptions across them are likely to often be mutually reinforcing.

By contrast, the experiment described here threw up an intriguing finding concerning the relationship between views about police fairness and community engagement. These are clearly conceptually distinct constructs in both subjective and objective terms. It is possible for an individual to believe the police are fair but not engaged with the community, while, in contrast, certain ways of being engaged with the community, such as if one section wants particular action taken against another, could certainly lead to unfairness. However, previous work has found that, empirically, public opinions about police fairness and community engagement are so highly correlated as to make them almost inseparable (Jackson and Bradford in press; Stanko and Bradford 2009). When people (in London at least) think about how fair the police are, they do so in ways very strongly related to their assessment of its relationship to their local community. But the data presented here show that public opinions about police fairness and engagement reacted *differently* to an external stimulus—the newsletter. This suggests that while highly correlated, these are indeed two distinct constructs in empirical as well as conceptual terms, and that they should continue to be treated as such wherever possible.

Conclusions

It must be recognized that police activities of the type described here contain ethical and moral pitfalls. There is the possibility that the public may be misled, whether accidently or purposefully, about the nature and achievements of policing. There is an inherent risk that successes will be exaggerated and, in particular, that failures will be elided. On the other hand, the need of the police to show active engagement with and responses to local people's priorities may shade over into a much more negative 'taking of sides', such as if police appear to, or do, favour one party over another in neighbourhood disputes, or if specific groups are singled out as having had action taken against them without a balancing recognition of what needs to be done *for* them. Neighbourhoods, especially in London, are not homogenous. Perceptions of what constitutes a problem in the local area can be diverse and decisions on police priorities controversial. One only needs to think about the response of many people to issues such as 'teenagers hanging around', and of what they would like police to do about this 'problem', to see how addressing such priorities, and informing the local community about it, might satisfy some in the local area but at the same time alienate others.

However, theses dilemmas are embedded in the very activity of policing and not unique to the type of communication discussed here (Manning 1997). In so far as

everyday policing finds ways to address such issues, this should also be possible in the much more restricted realm of written communication. More broadly, if communication between police is premised on the importance of transparency, truthfulness, sincerity and veracity (Habermas 1979), it should be possible to avoid the dangers of manipulating public opinion or positioning police as partial or as having taken sides in an unwarranted fashion. An obvious precondition for the newsletter to meet these criteria is that local police teams actually engage with the public: finding out and understanding their concerns, and doing something about them. In order to be credible, the newsletter cannot just pay lip service to modern 'community' policing methods, but needs to be reflective of the actual concerns, needs and experiences of the local public.

We close with a note of caution. For all that it appeared to have substantial effects, the newsletter in this quasi-experiment constitutes a 'weak' treatment. Most notably, it was a one-off event, and interviews were held within a few weeks of people receiving the leaflet. We can be fairly confident that the observed improvements were 'real' at the time respondents had been interviewed, because the quasi-experimental set-up is a strong guard against erroneously attributing the observed improvements to the leaflet when in fact they were due to something else. However, at present, we do not have the data to track how long the leaflet effect persisted.[2] It is possible that after a short-lived 'boost', opinions fell back to their initial 'baseline' level. Public notions of the police may be based on deeply held structures of feeling and orientations and thus relatively immune to major short-term change (Loader and Mulcahy 2003; Smith 2007; Reiner 2000). However, communications between police and public of the type discussed here should not be envisaged as one-off campaigns and occasional events. Rather, they should be components of a much wider and ongoing conversation through which the police continually ask people about their priorities, respond in appropriate ways and communicate back to the public—things that, after all, should be at the very heart of policing in a modern democracy.

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[2] The SNS survey was repeated in 2009 in the same seven wards, which should allow some consideration of any long-term differences between control and experimental wards.

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Appendix: Questions Used in the Analysis

'Overall' confidence

I would now like to talk about how well the police perform their job. Taking everything into account, how good a job do you think the police IN THIS AREA are doing? (Excellent; good; fair; poor; very poor.)

Police community engagement

To what extent do you agree with these statements about the police in this area? (Strongly agree; tend to agree; neither agree nor disagree; tend to disagree; strongly disagree.)

- They can be relied on to be there when you need them.
- They understand the issues that affect this community.
- They are dealing with the things that matter to people in this community.
- The police in this area listen to the concerns of local people.

Police fairness

To what extent do you agree with these statements about the police in this area? (Strongly agree; tend to agree; neither agree nor disagree; tend to disagree; strongly disagree.)

- They would treat you with respect if you had contact with them for any reason.
- The police in this area treat everyone fairly regardless of who they are.
- The police in this area are helpful.
- The police in this area are friendly and approachable.

Police effectiveness

Here is a list of services that the police provide. For each one, I would like you to tell me firstly how well you think the Metropolitan Police *actually carry out* each of them. Please use a scale of 1 to 7, where 1 = Not at all well and 7 = Very well.

- Responds to emergencies promptly.
- Tackle gun crime.
- Support victims and witnesses.
- Police major events in London.
- Tackle dangerous driving.

Feeling informed

How well informed do you feel about what the police in THIS AREA have been doing over the last 12 months? (Very well informed; fairly well informed; Not at all informed).

Satisfaction with recent police contact

(If respondent has had any contact with police in the last 12 months.) Taking all your experiences into account, are you satisfied, dissatisfied or neither with the service provided or the contact you had with the police? (Completely satisfied; very satisfied; fairly satisfied; neither satisfied nor dissatisfied; fairly dissatisfied; very dissatisfied; completely dissatisfied.)

Note: All questions also allowed 'Don't know' responses.

CHAPTER 4:

THE IMPLEMENTATION OF POLICE COMMUNICATION

Wünsch, D. and Hohl, K. 2009. Evidencing a "good practice model" of police communication: The impact of local policing newsletters on public confidence. *Policing: A Journal of Policy and Practice,* 3(4):331-339.

Evidencing a 'Good Practice Model' of Police Communication: The Impact of Local Policing Newsletters on Public Confidence[1]

Daniela Wünsch* and Katrin Hohl**

Abstract   This article examines the relationship between police–public communication and public confidence in policing. It draws on several years of research within the Metropolitan Police Service (MPS), including two qualitative studies that explored public information needs, and a collaborative effort between MPS and the London School of Economics to conduct a 'real world' experiment that tested the impact of newsletters on public perceptions and confidence. A good practice model of information provision is put forward, and evidence for its positive impact on public confidence and perceptions of policing, specifically on perceived police community engagement, is presented. The implications of these findings for the police are discussed with reference to the concepts of police legitimacy, trust and confidence.

Introduction

Modern policing is shaped by programmes such as 'citizen focused policing', 'reassurance policing' and 'neighbourhood policing'. British government bodies and the police established them with the aim to offset the decline in confidence in policing—a development the British Crime Survey has recorded over the past decades (Reiner, 2000; Innes, 2007). Understanding what constitutes and affects public confidence in the police is important for the effectiveness of such efforts. Communication and information provision to the public form an essential part of police activity that aims to enhance public confidence. But how can police communication with and information provision to the public be used to foster the police–public relationship and increase trust and confidence? How can such communication be practically implemented by the police? Is there evidence that it works? This article aims to address these questions based on the findings from several years of practical experience and empirical research within the Metropolitan Police Service (MPS), and a recent experiment that tested the effectiveness of newsletter communication on residents in three London wards.

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Background

The aim of enhancing public confidence in polic-
ing has become firmly embedded in performance
management frameworks of police services across
England and Wales. This is evident from the Home
Office (2008a) Policing Green Paper, which intro-
duced a new, over-arching, national confidence mea-
sure and set targets for significant improvements
in public confidence for every police force area. A
modern police service needs to concern itself not
just with preventing crime, solving cases and catch-
ing criminals, but also—and explicitly so—with its
relationship with the public it serves (Casey Review,
2008; Policing Pledge, 2008). The prominence of
confidence measures in modern policing resonates
with a large body of research that suggests that trust
and confidence in the police are at the heart of police
legitimacy (Bradford et al., 2009; Reiner, 2000; Tyler
et al., 1997). Beyond moral and ethical underpin-
nings of police legitimacy in society, confidence in
the police is important on a practical level—it is
crucial for the public's willingness to report crime,
cooperate with the police and obey police orders
(Bradford, 2008; Mawby, 2002). The procedural jus-
tice model (Tyler, 1990, 2006; Tyler and Huo, 2002)
suggests that confidence and legitimacy are both
shaped and expressed by police activities. In direct
encounters with the police, what matters most (and
more than the factual outcome of the encounter)
is whether people feel treated with fairness, dignity
and respect. Jackson et al. (2009), as well as Stanko
and Bradford (see this special issue) confirm this
finding and extend it to a confidence model that
identifies three main drivers of confidence. Beyond
perceptions of police fairness, perceptions of police
engagement with the needs, values and priorities of
the public are key components in building and main-
taining confidence. The third driver of confidence
refers to public perceptions of police effectiveness in
dealing with crime and anti-social behaviour.

Turning to what the police can do to enhance con-
fidence based on this driver model, research findings
suggesting contact with the police generally lowers

public confidence (Allen et al., 2006; Fitzgerald et al.,
2006; Skogan, 1990) are bad news for the police.
Indeed, some researchers have suggested that the
police are helpless against an asymmetry that sees
negatively experienced police contact decrease con-
fidence, but positively experienced contact unable to
improve it (Skogan, 2006; Smith, 2007). Yet, there
is emerging evidence that positively experienced en-
counters with the police can have a small positive
impact on perceptions of the police and confidence
(Bradford et al., 2009; Tyler and Fagan, 2006).

The majority of the public, however, do not have
direct contact with the police. Nevertheless, their
trust and confidence are important for police legit-
imacy in society and future contact. Mawby (2002)
suggests a link between the maintenance of police
legitimacy and what he calls 'police image work'.
Mawby argues that the police present certain im-
ages of themselves to the public in everything they
do. This may be intentional, for example, through
media or public relations work, or an unintended
by-product of day-to-day police actions. Police ac-
tivities, how the police are portrayed by the media
and how they portray themselves all need to demon-
strate that the police continue to deserve the trust
and support of the public.

While there is little doubt about the importance
of direct communication with the public, there is
some ambiguity about how and what kind of com-
munication and information provision is effective in
enhancing confidence. A number of studies attribute
low confidence in the police to a deficit in the pub-
lic's knowledge about actual crime figures and a lack
of understanding of police work and the criminal
justice system in general (Bradley, 1998; Hough and
Roberts, 2004; Roberts and Stalans, 1997; Smith,
2007; Todd et al., 2001). This would suggest that
information provision aimed at educating the pub-
lic might narrow both knowledge and confidence
'gaps'. Whilst a number of studies demonstrate evi-
dence for such a link (Chapman et al., 2002; Myhill
et al., 2003; Singer and Cooper, 2008), other research
discusses potential risks, warning that increased in-
formation provision could increase misperceptions

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and fear of crime (Demos, 2004; Johnson *et al.*, 2005; OPM, 2005).

A first step towards building clarity as to what constitutes effective communication and how to avoid increasing misperceptions or fear is to ask the public about what information from the police is useful and informative to them.

Towards a good practice model of information provision—asking people what they want

The MPS conducted a series of focus groups with Londoners in 2005 to explore public interest, needs and preferences regarding information from and about the police (OPM, 2006). A follow-up study in 2008 asked the public for feedback about two major strands of communication available to the MPS—the website and local policing newsletters (Ipsos-MORI, 2008). In both projects, participants expressed the need to receive more information from the police than they currently got, and a need for this information to be provided directly from the police, and on a regular basis. A monthly frequency was seen as ideal, although quarterly information was still considered acceptable. Finally, participants expressed a desire for a two-way communication, with information provision from the police as an integrated part of a dialogue between the public and the police. Turning to concrete aspects of the public information needs that emerged from these studies, the following good practice model condenses the key findings into a set of five principles of police communication:

1. Information should be instantly recognizable as being from the police. This is crucial in order to ensure interest and that the information provided will be read.

2. Information should pertain to the immediate local area. One of the strongest messages from the qualitative exploration of public information needs was that local information carried the most meaning and relevance.

3. Information should be provided about local crime and disorder issues. People want to learn about local problems, followed by information on police actions in response and, where possible, outcomes of these.

4. Information should make the police more accessible. People want to know about how to contact the police. This includes contact details of the local neighbourhood policing team, opening hours of local police stations and information on upcoming public meetings.

5. Communication needs to be inclusive. Style is important in this respect, and should be professional, yet 'approachable', avoid police jargon and technical terms and not presume too much prior knowledge on the part of the reader.

The good practice model provides general guidelines for what constituted good quality information provision in the eyes of the public. In the context of modern policing, two questions arise. Firstly, on a practical level, how can a best practice model be implemented? Secondly, is communication based on this model effective in informing the public and enhancing trust and confidence in the police?

Does it work? Implementation of the good practice model

At the time of this study, in summer 2008, direct police information provision to Londoners fell largely under the responsibility of the local Safer Neighbourhoods (SN) policing teams and was very much focused on getting 'good news stories' out. The MPS provided a corporate template for newsletters to support this. However, there were considerable variations across London—few SN teams handed out regular newsletters, and those that were disseminated differed greatly in frequency, content and quality.[2] In order to test the effectiveness of the good practice model, we designed the SN newsletters of three wards according to its five principles. This was done in close collaboration with the MPS SN

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[2] These observations were made by the MPS research team as part of scoping work for the second piece of communications research (by Ipsos-MORI in 2008).

Central Communications Team, the SN teams for the wards and the relevant Borough Press Liaison Officers. The five principles outlined above translated into the following features of the newsletter.

The front page showed both the MPS as well as the SN logo, a photograph of the local policing team in their uniforms, and a clear title ('News from your local police'). This was done to ensure the reader could immediately identify that the newsletter was directly from their local police. Additionally, the introduction clarified the role and purpose of the team. The newsletters highlighted current ward priorities and how they had been decided by the local community. The main part of the newsletter then focused on these priorities and the actions the local police teams had undertaken in response to them. Where possible, results and outcomes were reported. Relevant pictures of the local area and the team were included to enhance the local feel of the newsletters. A clear and comprehensive list of contact details for the local policing team was provided and, where possible, an invitation to any upcoming public meetings. Finally, every effort was made to ensure information was concise and understandable; care was taken to avoid police jargon and abbreviations, and to strike a balance between a professional yet approachable writing style.

Empirical evaluation: a quasi-randomized 'real world' experiment

In collaboration with researchers from the London School of Economics (LSE), the MPS carried out a quasi-randomised experiment on a population-representative sample in seven wards in London. The aim of the experiment was to rigorously test the effect of 'good practice' newsletter communication on public feelings of being informed, trust and confidence in the police, the three key drivers of confidence, as well as public perceptions of local crime and disorder.

Using the survey measure of confidence in the police, respondents were asked to indicate on a five-point scale, ranging from 1 = 'very poor' to 5 = 'excellent', how good a job they thought the police were doing in their local area. The three key drivers of confidence—engagement, fairness and effectiveness—are factor scores calculated based on the responses to a battery of items tapping into perceptions of and attitudes towards the police. We can only give a brief summary of the research design here. A detailed description of the factor model and the calculation of the factor scores can be found in Hohl, Bradford and Stanko (under review).

In order to measure the effect of the newsletters, the day of the dissemination was chosen to fall into the fieldwork period of the 2008 'Safer Neighbourhoods Survey' (SNS), an annual survey commissioned by the MPS. Face-to-face interviews were carried out with a random sample of 2,836 respondents, representative of residents aged 16 and over of seven London wards. The newsletters were disseminated on the same day, the 10th of June 2008, about halfway through the fieldwork period of the survey between 1st May and 31st July 2008 (a total of 17,117 newsletters). In this way, the survey allowed a comparison of responses before and after the newsletter drop. Because respondents within each ward were randomly allocated to interview dates, the day of the newsletter drop effectively created a randomized design. Consequently, we can expect the 'before' and 'after' groups to be, on average, no different from each other. Any nevertheless observed statistically significant differences must be due to something that happened on the 10th of June—the newsletter drop. There is, of course, the possibility that the observed effects were not (only) due to the newsletters, but induced by other events happing on or around the day of the newsletter drop. In order to measure if, and how much, coinciding events had an impact, and to then statistically separate them from the newsletter effect in the statistical analysis, the four wards included in the SNS that did not receive a newsletter functioned as control sites.

The wards included in the study were diverse with regard to age structure, ethnicity, employment status and the percentage of respondents that had contact

Table 1: Perceived informedness, confidence, perceived police community engagement, effectiveness and fairness before and after the intervention. *High factor scores = more favourable opinions*

	Test wards		Control wards	
	Before	After	Before	After
	% (95% C.I.)	% (95% C.I.)	% (95% C.I.)	% (95% C.I.)
Feeling informed about local policing	37.87%	49.40%***	38.25%	37.48%
(Ref.: not feeling informed)	(33.8%; 41.9%)	(45.6%; 53.2%)	(34.95; 41.6%)	(34.1%; 40.8%)
Confidence (Ref.: police are doing a	76.73%	84.88%***	86.60%	87.63%
poor/very poor job in the local area)	(73.0%; 80.4%)	(82.1%; 87.7%)	(84.2%; 89.1%)	(85.3%; 90.0%)
	Before	After	Before	After
	Mean (95% C.I.)	Mean (95% C.I.)	Mean (95% C.I.)	Mean (95% C.I.)
Drivers of confidence				
Community engagement	−0.233	0.061***	0.041	0.057
	(−0.351; −0.116)	(−0.027; 0.150)	(−0.044; 0.127)	(−0.017; 0.132)
Police fairness	−0.113	0.016	0.080	−0.016
	(−0.226; −0.001)	(−0.073; 0.105)	(−0.004; 0.164)	(−0.048; 0.060)
Police effectiveness	0.217	0.076*	0.118	−0.299***
	(0.103; 0.330)	(−0.009; 0.160)	(0.032; 0.204)	(−0.380; −0.218)

Legend: $***p < 0.001$; $**p < 0.01$; $*p < 0.05$.
Total sample size = 2,830. Unweighted data.
Summary statistics, total sample:
Engagement min. = −3.20, max. = 1.93, range = 5.12, mean = 0.00, SD = 1.05.
Effectiveness min. = −3.07, max. = 2.22, range = 5.29, mean = 0.00, SD = 1.07.
Fairness min. = −4.13, max. = 1.88, range = 6.01, mean = 0.00, SD = 1.09.
Source: London Metropolitan Police Safer Neighbourhoods Survey 2008.

with police and/or had been a victim of crime within the previous year.[3] However, once grouped together, the group of test wards—with the exception of being more deprived—had similar socio-demographic make-ups as the group of control wards.

In addition to this statistical control for confounding factors, we carried out a media analysis of all newspaper articles mentioning the MPS anywhere in the text published in 11 major newspapers on the day of or shortly after the newsletter drop.

Results

Before the newsletter dissemination, 38% of respondents in both test and control wards felt informed about what the police were doing locally. After the newsletter drop, this percentage increased to 49% in the test wards, but remained unchanged (at 37%) in the control wards (Table 1). This finding indicates an immediate effect of the newsletters on informedness, and gives some reassurance that the experiment has

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[3] An initial scoping exercise was undertaken to find out about existing newsletter activity in the seven wards. The seven wards represented a range of past and current newsletter practice and experience. The SN Teams were contacted and the test wards were then selected through a form of convenience sampling. This considered the following factors: existing newsletter activity and ensuring a range in both test and control wards; the pilot was not to interfere with existing initiatives (such as newsletters already being delivered as part of borough-based programmes) and whether the SN Teams were able to commit some of their time to getting involved in the creation of the newsletters.

worked—that is, that newsletters have indeed been disseminated and read on the test wards, but not on the control wards.

Turning to confidence in the police (Table 1), the percentage of respondents feeling the police is doing a good or excellent job increased by a statistically significant 8.4% following the newsletter drop (from 76.7% to 84.9%). No statistically significant change was observed on the control wards.

Table 1 also reports the observed mean factor scores of the three key drivers (perceived police community engagement, police effectiveness and fairness), with 95% confidence intervals around their population estimates in the control and test wards before and after the newsletter drop. The newsletter appears to have had the strongest impact on perceptions of police community engagement, where we observe a substantive statistically significant increase on the test wards. No significant change is observed on the control wards.

Perceptions of police effectiveness in dealing with crime significantly worsened after the 10th of June—the day of the leaflet drop—across both test and control wards. This suggests the possible effect of some external coinciding event. We conducted a comprehensive media analysis[4] to explore this further. The results pointed to two coinciding high-profile stories: accusations of racism within the MPS, in particular against the then Commissioner Sir Ian Blair, and a series of knife crimes and fatal stabbings of teenagers in London. However, the decrease in perceived police effectiveness was significantly smaller on the test wards than on the control wards. This is an important finding, suggesting the newsletter may have had a buffering effect on people's confidence in police effectiveness in dealing with crime when current events cast doubt on the police ability to do so.

Neither the media coverage of these events nor the newsletters appear to have had an effect on public perceptions of police fairness. It appears that perceptions of how the police treat people in direct encounters are not easily changed by written communication from the police or media reports such as those coinciding with this experiment.

Before we move on to the effects on perceptions of crime and disorder, it is worth noting that although the test and control wards had similar socio-demographic, economic and crime statistical profiles, the test wards started off with significantly lower levels of confidence and significantly less favourable views of police community engagement and fairness than the control wards. To what extent the effectiveness of the newsletter depends on the current level of confidence is an interesting question for future research, but requires panel data.

The effect of the newsletters on perceptions of crime and disorder was less clear. The findings suggested that following the newsletter dissemination, concern about some crimes decreased, yet worry about others increased (Table 2). For example, the percentage of respondents perceiving muggings and racially motivated attacks as a problem decreased significantly (despite not being mentioned explicitly in the newsletters), whilst concern about anti-social behaviour (ASB) significantly increased (mentioned in the newsletters). This suggests that the problems people see in their local area are not easily changed by newsletter information. However, despite perceptions of ASB as a local problem increasing, the amount of people who identified a local problem area significantly decreased in the test wards. The newsletter may have drawn attention to local issues of which respondents were previously unaware, but at the same time provided reassurance by communicating police responsiveness to these issues.

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[4] The analysis included all 294 newspaper articles containing the words 'Metropolitan Police' published between the 8th June and the 10th of July in the following newspapers: Daily Mail and Mail on Sunday (49 articles), News International Newspapers Information Services Ltd (10 articles), The Daily Telegraph (London) (39 articles), The Evening Standard (London) (68 articles), The Express Newspapers (2), The Guardian (London) (32 articles), The Independent (London) (23 articles), The Mirror and The Sunday Mirror (14 articles), The Observer (6 articles), The Sunday Express (4 articles), The Times & Sunday Times (47 articles).

Table 2: Percentage of respondents perceiving the particular crime issue as a problem in the local area before and after the intervention

	Test wards		Control wards	
	Before %	After %	Before %	After %
Racially motivated attacks	34.74%	26.65%***	25.09%	23.79%
Muggings	61.03%	54.79%***	45.19%	45.08%
Burglary	55.15%	53.29%	45.55%	46.45%
Drink driving	27.94%	16.47%***	25.09%	19.80%**
Gang crime	39.15%	42.36%	29.11%	30.76%
Gun crime	27.57%	20.21%**	23.87%	22.79%
Drug use and selling	48.89%	48.05%	37.02%	33.25%
Anti-social behaviour	33.64%	41.47%**	34.10%	34.00%

Legend: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.
Total sample size = 2,830. Unweighted data.
Source: London Metropolitan Police Safer Neighbourhoods Survey 2008.

In summary, the study provides strong evidence of a statistically significant positive effect of the newsletters on overall confidence and perceived police community engagement. The newsletter appears to have had a buffering effect on perceptions of police effectiveness in dealing with crime when this was threatened by current events. However, the newsletters did not have a significant effect on perceptions of police fairness. How information provision via newsletters affects perceptions of local crime and disorder is unclear. Following the newsletter, some crimes were perceived as a problem by a greater proportion of respondents whilst others were perceived as problematic by fewer respondents.

Discussion

This article explored how written police communication can help to secure and enhance public trust and confidence, including those members of the public that have had no direct contact with the police (yet). The proposed good practice model gives practical guidelines for police communication, and the newsletter experiment provides evidence for its effectiveness in enhancing 'overall' confidence and two main drivers—public perceptions of police community engagement and police effectiveness. Fur-

thermore, in this 'real world' experiment, respondents on the test wards have, coincidentally, been exposed to conflicting messages about police effectiveness from different sources of information—the local newsletters from the police and negative media coverage about the police—with an interesting outcome. The information people received via the newsletters—directly from the police and about what the police were doing—seemed to have buffered much of the negative impact of the media reports on escalating knife crime and police internal racism accusations. This finding is worth further investigation within the context of the ongoing debate and current research on the role of the media in public perceptions of the police (Mawby, 2002; Reiner, 2000).

Let us now turn to the structures and mechanisms that underlie the observed effect of the newsletters on confidence. What constitutes good police communication and information provision in the eyes of the public—and lies at the heart of the good practice model proposed here—resonates with general models of confidence in the police, rather than being explained merely by a gap between public perceptions and 'actual' crime statistics, conviction rates and prison sentence lengths. The procedural justice model and the model of three drivers of confidence imply that in order to enhance confidence, police

communication needs to demonstrate that the police listen to and understand the public's concerns (police engagement) and address these effectively. The information needs participants expressed in the two studies preceding the newsletter experiment sit well with these models of confidence: respondents wanted a police that directly engaged in a two-way communication process, which included information provision from the police and about what the police were doing to address local concerns, followed by how successful (effective) they were in tackling these. Similarly, the guidelines of the good practice model that pertain to ways of making the police appear more accessible, approachable and helpful, resonate with the ideas of police community engagement. The empirical 'real world' experiment gives support to both the conceptual models of confidence and the good practice model for police communication.

The success of the good practice model-based newsletters in our experiment might thus at least in part be explained by the newsletters listing the concerns and priorities of the public, demonstrating that the police know about them, understand them, take them seriously and see it as their 'fiduciary' duty (Beetham, 1991) to respond to them. Furthermore, the newsletter may also have signalled police community engagement by explicitly inviting the public to speak to the police and let them know their views. In this way, the newsletter can initiate and become part of a cycle of local problem-solving and an ongoing dialogue between police and policed.

Finally, cautionary notes need to be made to put the findings into context. Firstly, although the newsletters evidently had a substantial effect, we only measured a relatively short-term effect because respondents were interviewed within a few weeks of receiving the newsletter. However, the data available did not allow tracking how long the 'newsletter effect' persisted. It is possible that after a short-lived 'boost', people's opinions fell back to their initial 'baseline' level, and it requires future studies to test if and when newsletter effects wear off. Yet, com-

munication between police and public of the type discussed here should not be envisaged as one-off campaigns. Rather, they should be components of a much wider and ongoing conversation through which the police continually ask people about their priorities, respond in an appropriate way and communicate this back to the local community.

Furthermore, and related to the previous point, the contents of a 'good practice' newsletter require that local police effectively engage with the public about their concerns in the first place. In order to be credible, the newsletter cannot just pay lip service to modern policing, but the reported local area priorities should reflect actual local concerns. In practice, local priorities in London are decided by SN ward panels. This implies that the police must make an effort to invite a diverse enough group of local residents to the ward panels to be representative for the local area. Once identified, local problems need to be tackled. In other words, we suggest that the potential of local information provision in improving confidence hinges on the newsletter being reflective of local area concerns and experiences, and genuine effort on the part of the police to put modern local area policing into practice.

Embedded in a comprehensive modern police strategy, however, newsletters should play a vital role within a wider communications strategy for police and public, and do have the potential to make a significant contribution to the improvement of public confidence in the police.

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CHAPTER 5: THE ROLE OF FEELING INFORMED

Enhancing confidence in the police: how information provision affects trust in the police amongst the least, 'average' and most police-trusting citizens.

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Abstract

Information provision does not have the same effect on confidence in the police in all citizens. Those with low levels of trust are not only more likely to feel ill-informed about what police are doing, their trust is also more strongly affected by the perceived (lack of) information provision from police. In other words, the strength of the association between perceptions of information provision and trust increases as we move from the most to the least trusting citizens. This is an example of a broader methodological issue: standard regression methods typically used to investigate relationships between variables preclude the discovery of such differential effects. This article outlines the limitations and fallacies of the routine (over-)use of standard linear regression. Using the example of the potential of police information provision to enhance public trust in the police, the article shows how quantile regression can help avoid some of these fallacies and allows the researcher to address a broader range of research questions.

Key words

quantile regression; mean focus fallacy; research methodology; regression analysis, trust and confidence in the police, perceived information provision.

1. Introduction

In the early 2000s the Home Office and the Ministry of Justice attempted to close the 'reassurance gap' – falling confidence in the police despite falling crime rates - by educating the public about crime and the criminal justice system. 'Irrationally inflated' levels of public fear of crime and low confidence in the criminal justice system were attributed to the public's lack of knowledge about actual crime trends and the workings of the criminal justice system. The solution to the reassurance-gap problem seemed obvious: educating the public about the criminal justice system and actual crime trends should resolve the disconnect between public beliefs and the 'reality' of crime statistics and criminal justice practice, and increases in public confidence should follow (Singer and Cooper 2008). Indeed, Chapman et al. (2002) and Salisbury (2004) found that levels of knowledge about crime and criminal justice in the British public were generally low. In particular, knowledge about crime trends and sentencing was poor (see also Roberts and Hough 2005). And crucially, survey respondents with low levels of knowledge also tended to have lower levels of confidence in the criminal justice system. To test the effectiveness of public education, both studies included experiments in which respondents were provided with information about crime and the workings of the criminal justice system. The findings suggest that information provision leads to modest increases in knowledge about crime and the criminal justice system, and that the increase in knowledge is associated with a modest increase in confidence in the criminal justice system (see also Allen et al. 2007, Myhill et al. 2003).

Whilst the public re-education approach is premised on a well-evidenced fact – low levels of knowledge and widespread false beliefs about crime and the criminal justice system – it has its pitfalls. Hohl et al. (2010) argue that information material produced simply to correct 'erroneous' ideas runs the risk of being perceived as patronising missives from a remote power, and could even backfire if the information material does not address local area concerns and priorities. In more recent years, a better understanding of the factors that underpin trust and confidence in the police has shifted the focus away from

'correcting' public perceptions of crime towards information provision as part of neighbourhood policing strategies. Here, information provision is used as a way of engaging with the local community. Through local newsletters, the police can show they understand local concerns and priorities, report back to the community what they are doing to address them and in this way, show themselves transparent and accountable to the public (Innes 2007, Wünsch and Hohl 2009). Information provision aimed at demonstrating engagement with the public, transparency and accountability inserts public perceptions of police information provision into the path that runs from information provision to public confidence in the police.

The remainder of the article addresses some of the wider methodological issues in the exploration of research questions like 'Do perceptions of how well the police keep the public informed enhance public trust and confidence in the police?' '(How) does variable X affect variable Y?' is a classic in quantitative criminology and the social sciences at large. It is also the stronghold of regression analysis. Standard linear regression modelling has advanced how social scientists subject data to systematic analysis, and shaped the ways in which research questions and hypotheses are formulated within a statistical model. However, this comes at the cost of leaving some potentially important research questions unasked, and inevitably, unanswered. At the stages of research design, data analysis and interpretation, standard regression techniques constrain the scope of the inquiry such that theoretically interesting aspects of the effect of the explanatory variables on the dependent variable may be neglected. In his account of the 'tools to theories' heuristic, Gigerenzer (1991) persuasively argues that familiarity and routine use can lead the researcher to weave the statistical tool into the fabric of the scientific theory. In a similar vein, this article discusses the fallacies inherent in the routine (over-)use of standard regression analysis in the social sciences. On a practical level, the article explores how quantile regression can help avoiding some of these fallacies and allow the researcher to address a broader range of research questions.

Although there is a section on quantile regression in most econometrics textbooks and the models are used in some areas of research within econometrics, this regression method is still largely unknown in the other social sciences. The article gives a non-technical introduction and explains how quantile regression can be practically applied using the empirical example of the relationship between perceived information provision and public trust in the police. The paper concludes with a brief discussion of the origins and implications of the mean focus fallacy for the social sciences.

2. The limitations of standard linear regression

To illustrate the limitations and fallacies of standard linear regression let us return to the research question that motivates this article: Do perceptions of information provision have an effect on public trust in the police? The most straightforward empirical route to answering this question is to express the relationship between perceptions of police information provision (abbreviated PPIP hereafter) and a measure of public trust as simple difference in means and proportions, correlation or regression coefficient[1] and use standard statistical inference tests to assess the statistical significance of the association. This is precisely the route existing research has taken (Chapman et al. 2002, Salisbury 2004, Singer and Cooper 2008, Wünsch and Hohl 2009, Hohl et al. 2010).

Let us consider the case of univariate linear regression without control variables here, since all relevant issues can be readily extended to the multivariate case. The research question then translates into a linear regression model with a measure of PPIP as the explanatory and trust in the police as the dependent variable. The regression coefficient provides the expected change in public trust that corresponds to a one unit change in the PPIP variable. To illustrate this with an empirical example, data from three sweeps of the Metropolitan Police Public Attitude Survey (METPAS 2007/08 to 2009/10) are used. The METPAS has a sample size of 20,000 respondents per year that is population representative of Londoners aged 16 and over. Face-to-face interviews are held continuously

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[1] The difference between a correlation and a regression coefficient is simply that the latter depends on the units of measurement of the explanatory and dependent variable, while the correlation coefficient does not. Regression it is often chosen when it is desirable to consider a number of explanatory variables simultaneously.

throughout the year. The survey includes a wide range of questions on experiences with, perceptions of and attitudes towards the police and crime, as well as socio-demographic characteristics.

The dependent variable, trust in the police, is a composite indicator based on respondents rating (on a 5-point scale) of the extent to which the respondents feel the police listen to the concerns of the local people (1), understand the issues that affect the community (2), are dealing with things that matter to the community(3), can be relied upon to be there when you need them (4) and to deal with minor crimes (5), treat everyone fairly regardless of who they are(6), would treat the respondent with respect if they had contact with them for any reason (7), are friendly and approachable (8), easy to contact (9) and helpful (10). To simplify the example, a basic sum score is calculated, ranging from 10 =low trust to 50=high trust in the police[2]. The scale has high internal consistency (Cronbach's alpha=0.92).

The explanatory variable PPIP is the response to the question "How well do you think the Metropolitan Police keep the public informed about what they are doing?", rated on a 7-point scale from 1=not at all well to 7=very well.

The simple linear regression estimate of the effect of PPIP on public trust suggests a statistically significant relationship (*p-value*<0.001). On average the mean level of trust increases by 1.5 points (on a 10-50 scale) for every one-point increase in the rating of how well the police are keeping the public informed (7-point scale). While this standard result is informative, it has limitations and pitfalls. In order to understand these, we need to consider some basic properties of a linear regression model.

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[2] A latent trait score would be a more appropriate way of condensing responses to the 10 survey items into a measure of trust in the police. A sum-score has been chosen for ease of interpretation in this primarily illustrative analysis. The findings do not change when a latent trait score is used instead of a simple sum-score.

The standard linear regression model

Readers uneasy with statistical notation may skip the formulae; the statistical notation is not essential to the main argument. The standard linear regression model can be formulated in two ways:

$$E(y \mid x) = \beta x \; ; \; var(y \mid x) = \sigma^2 \qquad (1)$$

$$(1) + \text{normality: } y \mid x \sim n(\beta x, \sigma^2) \qquad (2)$$

where the vector x contains the set of explanatory variables and β is the vector of the regression parameters (i.e. the intercept and regression coefficients). $E(y \mid x)$ denotes the expected value for the mean of the dependent variable Y conditional on the set of explanatory variables contained in the vector x and $var(y \mid x)$.

We do not assume a deterministic relationship between the explanatory and dependent variable. If there was a deterministic link between PPIP and trust we would expect everyone within the same perception of police information provision to be equally trusting in the police. This assumption is not realistic. Instead, we assume some variability in trust between people who give the same rating of how well the police are informing the public. That is, we assume a probability distribution of trust for every level of the explanatory variable PPIP. The second model formulation (2) differs from the first (1) only in that it additionally assumes that these conditional (on the level of the explanatory variable X) distributions of the dependent variable Y with variance σ^2 have the shape of a normal distribution.

Central to our concerns are two properties of the model. First, the explanatory variables are used to model the mean of the dependent variable and second, the assumption of constant variance (homoscedasticity).

The regression on the mean property

The regression function $Y = a + b*X$ predicts the expected value (mean) of the probability distribution of the dependent variable Y at a given level of the explanatory variable X. If the formulation (1) is chosen, the model does not specify anything about how the full conditional distribution responds to changes on the explanatory variable.

Under formulation (2), the model makes a very specific *assumption* about the response of the full conditional distribution to changes on the explanatory variables. The normality assumption implies that a one unit change on the explanatory variable shifts the full conditional distribution up or down without affecting its variance or (normal) shape. This means, the regression effect predicted for the mean is assumed to generalise to all other locations on the distribution of the response variable.

Applied to our example, the 1.5 point increase in trust that corresponds to a one-point higher rating of PPIP is the effect we expect PPIP to have on an individual at an average level of trust in the police, the mean of the conditional trust distribution. But what about the effect of PPIP on the 10 percent least trusting or the 10 percent with the greatest trust in the police? Does keeping the public informed enhance the trustworthiness of the police in all members of the public by the same amount, e.g. by 1.5 points as predicted for the mean?

We cannot answer this question under formulation (1), and under formulation (2), we assume it away since the normality assumption effectively states upfront that everyone is affected by their perception of how well the police keeps the public informed in the same way.

The constant variance assumption
The standard linear regression model includes the assumption that the conditional distributions over the predicted means of the dependent variable for given values of the explanatory variable all have the same variance σ^2 (homoscedasticity). The homoscedasticity assumption does not hold when the amount of variability over the expected value of dependent variable for a given value of the explanatory variable X is not the same at every level of X, but varies systematically with the level of X. The problem is not so much that such heteroscedasticity violates a model assumption. The ordinary least squares (OLS) estimate of the regression coefficient β is still unbiased and the standard errors can be easily corrected as to allow for valid statistical inference. The point here is that the homoscedasticity assumption restricts the empirical exploration of the relationship between the explanatory and response variable.

Systematic differences in the variability and shape of the conditional distributions over the predicted means at different values of the explanatory variable provide information about potentially important aspects of the relationship. How does PPIP affect the variance and skew – diversity and disparity – of public trust in the police? Is there evidence that the lower, average and most trusting individuals do not only differ in their PPIP, but are also affected differently by their PPIP?

The standard linear regression model does not attempt to address these questions empirically. Instead, the constant variance assumption implies that there are no effects on the variance (spread) of the distribution of the dependent variable. The model remains silent on how the explanatory variables affect the skew of the response variable under formulation (1), and under formulation (2), the normality assumption entails that there are no effects on the shape (including its skew) of the distribution of the dependent variable.

Summary: a trade-off between parsimony and the "mean focus fallacy"

The popularity of standard linear regression is not unfounded. A standard linear regression model is easy to estimate and straightforward to interpret. And when all model assumptions are met, the model provides a parsimonious summary of the relationship between the explanatory and dependent variable. Instead of analysing the relationship between these two distributions completely, a generalisation is made and the regression effect of the explanatory variable on the mean of the dependent variable is assumed to describe the overall relationship between the two variables reasonably well.

Yet, the virtues of the standard linear regression model are also potential pitfalls. The model reduces the focus of the analysis to the prediction of the mean of the dependent variable, and this may lead to invalid inferences. At the same time it precludes the analysis of the ways in which other parts of the distribution respond to changes on the explanatory variable.

Standard linear regression thus carries the risk of committing what one might call the *mean focus fallacy*, that is, basing substantive conclusions on mean-

focussed regression results that either distort or entirely fail to capture important aspects of the relationship under study. In this way standard linear regression may constrain the social scientific understanding of the phenomenon in question.

3. Four diagnostic questions on the mean focus fallacy

Thus far, two important properties of the standard linear regression model have been reviewed and attention drawn to its limitations in describing the relationship between explanatory and dependent variables adequately and comprehensively.

The following set of four diagnostic questions is intended to help the researcher avoid the mean focus fallacy and to recognise generic types of research questions that require the analysis to go beyond the narrow focus on the mean. Questions one and two concern situations in which the research interest lies in finding out how some specific quantile (rather than the mean) of the dependent variable responds to changes in the explanatory variables. A θth quantile is a number such that θ% of the scores fall below it and $(100-\theta)$% fall above it. For example, the 30th quantile is the point at which 30% percent of the data fall below and 70% fall above that value. The 25th quantile is also called the first or lower quartile, the 50th quantile is the median or second quartile, and the 75th quantile is called the third or upper quartile.

Questions three and four identify research questions that require looking at the full distribution of the dependent variable rather than focusing on a particular point on it.

- *Is the research question really about the mean, or in fact about a quantile?*

The substantive research interest may lie in specific quantiles of the dependent variable rather than the mean. In social science and policy making, it is often the extremes of the distribution that are of immediate concern or most informative with regard to theory testing and policy implementation. For example, the poorest 10 percent of the population, patients at the extremes of a psychological disorder spectrum, or the 5 percent top performing universities might be of greater conceptual and policy interest than those around the mean.

In these cases, the mean is simply not of genuine interest to the research question. By extension, estimating the effect of the explanatory variable on the mean rather than the immediately relevant point on the distribution of the dependent variable is imprecise at best and uninformative or entirely misleading at worst.

With regard to the example of whether keeping the public informed aids public trust, the motivation behind much of the research on how police can enhance trust and confidence in the police is to improve trust in the general population, however in particular also in those who do not trust the police and might thus be less willing to cooperate with police and obey police orders, or call on the police when they become the victim or witness of a crime. With regard to PPIP, the Metropolitan Police and the National Policing Improvement Agency (NPIA) have made various attempts of 'segmenting' the public with an eye on targeting information provision[3]. Examining whether information provision is equally effective for those with no or little trust in the police and those with high levels of trust in the police becomes central here.

- *Is regression on the mean the best way to summarise the relationship?*

If the research interest lies in a parsimonious summary of the relationship between the explanatory and dependent variable, standard regression might not be the best way to achieve this if the mean is not a good measure of central tendency. This can be the case when the dependent variable is highly skewed or has influential outliers that cannot be removed from the dataset. In this case, the median is a better measure of central tendency because it is insensitive to outliers. By extension, regression on the median (rather than the mean) is a way of protecting the regression line from being dragged towards one or two outliers located far away from all the other observations in the dataset, or in the case of a highly skewed distribution, unduly heavily drawn towards the observations in the tail.

Skewed distributions are frequently observed in psychometric measures of mental states (e.g. depression, anxiety or compulsive-obsessive disorders), many measures of attitudes and public opinion and indicators of social status.

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[3] Metropolitan Police Service London internal documents, 2010.

Returning to the example of trust in the police, empirical evidence shows that trust in the police is not normally distributed, but left skewed. Most people have trust in the police (Flatley et al. 2010). Across different survey measures of trust and confidence in the police, including measures of key components of trust (for example, trust in police effectiveness or police fairness) that are more reliable measures of trust than single item questions, we consistently find that most respondents have high levels of trust and a long tail of respondents with no or little trust in the police stretching from the midpoint to the low end of the trust distribution (Jackson et al. *forthcoming*). In such cases, the median is better suited to represent the dependent variable and, by extension, how it responds to changes on the explanatory variable.

- *Are there reasons to think that the low, average and high end of the dependent variable might respond differently to changes on the explanatory variables?*

Differences in the way different parts of the distribution respond to changes on the explanatory might be informative with regard to the research question and have important implications for conceptual understanding and policy making. For example, a therapeutic treatment might control depression in mildly depressed patients but be ineffective among the 10 percent most depressed patients; or the gender gap in educational attainment might be very large amongst the lowest performing students but disappear in the 20 percent highest achieving individuals.

On the trust in the police example, current studies rely on standard linear regression and thus only provide empirical evidence of the correlates and regression effects on individuals located at the (conditional) mean of the trust and confidence distribution. We do not know whether the explanatory factors associated with the mean operate in similar ways at the extremes of the trust distribution – those who lack trust in the police and those who are most trusting in the police. Yet, we might be particularly interested in such multiplicity and exploring which factors can enhance trust in the least trusting members of society and whether these factors differ from the factors that account for the high levels of trust in the most trusting citizens. To this end, exploring the diversity in what

affects trust in the police at different levels of the (conditional) trust distribution is called for, rather than averaging over differences between those with no and those with abundant trust and summarising the relationship in a (potentially misleading) single regression coefficient.

- *How do explanatory variable(s) affect the distribution – the variance and skewness - of the dependent variable?*

The answer to many research questions demands the analysis of the effect of the explanatory variable on the variance, skew or some other aspect of shape of the distribution of the dependent variable. The study of how a particular intervention or a set of explanatory variables impact on social- or any other form of inequality falls into this category.

In the context of our trust in the police example, the analysis of effects on disparities in trust in the police (rather than mean levels of it) might be useful for researchers and policy makers interested in the explanation of differences between subgroups of the population (notoriously black and minority ethnic groups) and the development of cross-national comparative measures of public trust in criminal justice systems. The Eurojustis project[4] or the Justice module in the European Social Survey (ESS)[5] are examples of such cross-national studies. Aggregated to the country level, survey measures of trust, the propensity to cooperate with criminal justice authorities or felt obligation to obey the law as they are used in these studies are not single scores, but distributions. Rather than comparing their respective means, the analysis of differences in the shape (scale and skew) might reveal cross-national differences in inequality in experiences with the criminal justice system, and in how widespread or marginalised particular attitudes, perceptions and behaviours are within different countries. Quantile regression provides a systematic way of analysing cross-national differences of this kind, and testing individual and national-level factors thought to explain them.

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[4] http://www.eurojustis.eu/
[5] http://www.europeansocialsurvey.org/index.php?option=com_content&view=article&id=231&Itemid=333

Solutions within the standard linear regression model framework?

Diagnostic question one and two refer to situations where there is a need to predict how the median or some other quantile responds to changes on the explanatory variable. As outlined earlier, the standard linear regression model is not an option here, since it is limited to the prediction of conditional means.

Differential effects (see diagnostic question 3) manifest themselves in heteroscedasticity. Modifications of the standard linear regression model allow us to remedy the symptoms, but not to analyse its cause. Common ways of restoring homoscedasticity are non-linear transformations of the response variable, such as quadratic specifications or logarithmic transformations. This can help to get rid of the heteroscedasticity problem and produce a more precise estimate of the regression effect on the mean. Yet, these modifications of how the explanatory variables enter the model do not change its basic properties: the linear regression still predicts nothing beyond the conditional mean of the dependent variable at a given level of the explanatory variable; and it retains the assumption that the variability of the distribution over the predicted conditional mean of the dependent variable is the same at all values of the explanatory variable.

Furthermore, it is important to note that quadratic, logarithmic or other non-linear transformations of the explanatory variables within the model also do not address the issues raised here. The only aspect of the model that changes is that rather than connecting the expected values (conditional means) of the dependent variable by a straight regression line, the model now connects them with a curvilinear regression line. This helps addressing questions about the functional form of the relationship between the explanatory variables and the mean of the dependent variable. However, variable transformations do not return answers to research questions like those formulated in diagnostic questions three and four, which are about the relationship between the explanatory variables and the entire distribution (not only the mean) of the dependent variable.

The fourth question on the effects on inequality and diversity is often addressed either by making simple group comparisons or by summarising inequality in some kind of index, for example the Gini-Coefficient, and then analysing this summary statistic in a standard linear regression. This indirect approach is fallible for several reasons. The need to represent inequality in the form of indices and simple group comparisons come at the cost of distorting and losing information, and is prone to producing invalid estimates. Heckman (1979) and Koenker and Hallock (2001) show how this can result from dividing the sample into groups according to the dependent variable (unconditional on the explanatory variables) and then proceeding with group comparisons within a conventional regression analysis. It is possible to extend the standard model so as to let the variance depend on the explanatory variables (Carroll and Ruppert 1988). Yet, variance function estimation approaches are not straightforward to implement and still not flexible enough to handle the broad range research questions that are about aspects of the distribution other than its variance.

4. A way forward: Quantile regression

The next step is to outline a more flexible alternative. Quantile regression makes it possible to address the research problems described above without making unnecessary compromises and restricting the empirical analysis to the capabilities of mean-oriented regression tools.

4.1 Definition and estimation of the quantile regression model

Quantile regression is in many ways a natural extension of standard linear regression. Like standard linear regression, quantile regression is appropriate for continuous dependent variables. It is not appropriate for the four- to six-point scales that have become a standard in survey research and are often analysed as if they were continuous. The explanatory variables can have any measurement level.

The main difference between quantile regression and conventional regression is that instead of predicting the effect of a marginal (one-unit) change in the explanatory variable X on the *mean* of the dependent variable Y, quantile

regression predicts the effect of a one-unit change in the explanatory variable on some researcher-defined *quantile* of the distribution of Y; for example the first decile (0.10), the first quartile (0.25), the median (0.50) , the 80th quantile (0.80) or the 95th quantile (0.95).

If we run a series of quantile regressions simultaneously, for example, beginning with the 5th quantile in the left tail and predicting quantiles in regular intervals up to the 95th quantile in the right tail, we can collect enough snapshots to characterise the relationship between explanatory and dependent variable along the entire distribution of the dependent variable, and detect when some parts of the distribution respond to changes on the explanatory variable differently than others.

The following section states the regression model in its general form as first introduced by Koenker and Bassett (1978), and outlines key features of quantile regression in comparison to standard linear regression. Hao and Naiman (2007) and Koenker (2005) provide comprehensive introductions to the method, including a discussion of computational aspects, inference and goodness of fit testing, censoring, and extensions of the model to duration-, panel- or time-series data.

The regression model for the θth quantile with $0 \leq \theta \leq 1$ can be written as

$$Q_\theta(y \mid x) = x\beta_\theta$$

where the vector x contains the set of explanatory variables and β_θ is the vector of the regression parameters (i.e. intercept and regression coefficients) and $Q_\theta(y \mid x)$ denotes the θth quantile of the dependent variable Y conditional on the set of explanatory variables contained in the vector x.

While the formulation of the quantile regression model is analogous to the conventional mean regression model, important differences arise in model estimation. In standard linear regression, ordinary least squares estimation minimises the sum of squared vertical distances between the observed data points and the fitted regression line. All data points above and below the

regression line are treated in the same way and the sign of the deviation is removed by the squaring.

In contrast, quantile regression minimises the sum of absolute vertical distances (no squaring) weighted by the quantile, where data points above the fitted line are weighted by the quantile θ and data points below the line are weighted by (1-θ).

This is best illustrated for the median. Because the median is the quantile that divides the data points into about equal halves (θ=0.5), the positive deviations (data points above the fitted line) and negative deviations (data points below the fitted line) carry the same weight (θ = 0.5; and (1-θ) = (1- 0.5) = 0.5) and we can simply minimise least absolute deviations (LAD) to estimate the median regression:

$$\sum_i | y_i - x_i \beta_\theta |$$

Generalised to all quantiles θ, the regression estimators are chosen to minimize

$$\theta \sum_{y \geq x_i \beta_{\theta_i}} | y_i - x_i \beta_\theta | + (1 - \theta) \sum_{y < x_i \beta_\theta} | y_i - x_i \beta_\theta |$$

with respect to β_θ.

The quantile regression model makes no assumptions about the conditional distribution over the predicted values for the quantiles. This reduces the misspecification risk inherent in making model assumptions that are potentially wrong. It also means that we cannot make use of these (assumed to be known) properties of the distribution of the error term in determining the standard errors for the quantile regression coefficients. Asymptotic results for the standard errors are complicated. Instead, bootstrap or other resampling methods are commonly used to obtain standard errors, test the significance and calculate confidence intervals for the regression coefficients.

Regression coefficients for different quantiles θ are directly comparable to each other and to the regression coefficient estimated for the standard linear model. A Wald test can be used to test the equivalence of regression coefficients across

quantiles, and determine whether any observed differences in regression coefficients are statistically significant. The standard software packages Stata and SAS include commands for this as part of a range of commands to estimate quantile regression models and graphically present the results.

4.2 Key properties of quantile regression

Before we move from the quantile regression model in its general form to the example of the effect of perceived information provision on public trust in the police to illustrate the interpretation of the regression results, let us briefly summarise the key properties of quantile regression and consider how they help address the four diagnostic questions above.

Quantile regression can predict the effect of the explanatory variable on any quantile of the dependent variable. In this way, it can address the research problems described by the first and second diagnostic question, that is, answer research questions that are about the effect of the explanatory variables on the median (diagnostic question 2) or some other specific quantile of dependent variable, for example the 10 percent most deprived citizens (diagnostic question 1).

Regression coefficients estimated for a series of quantiles can be used to characterise the entire conditional distribution of a dependent variable given the set of explanatory variables. Differences in the direction and magnitude of regression coefficients at different quantiles may point towards conceptually important aspects of the relationship between the explanatory and dependent variable (diagnostic question 3).

Differences in the size of regression effects at different quantiles can also be used to calculate the effect of the explanatory variables on the spread and skew of the dependent variable, thus offering a way to address research questions on what affects variability and inequality in the dependent variable (diagnostic question 4).

Finally, unlike in standard linear regression, the regression coefficients in a quantile regression possess the so-called property of equivariance to monotonic

transformations of the response variable (as long as transformations are monotone, i.e., the order of the observations is preserved). This means that, for example, the model for the quantiles of log(Y) is simply the log of the model for the quantile of Y. This equivariance property is particularly useful when the dependent variable is censored, i.e. when values of the dependent variable Y that greater than some threshold C are recorded as being equal to C (the maximum value of the scale). Because of the equivariance of quantiles to monotone transformations, all conditional quantiles that are smaller than C are unaffected by the censoring. If, for example, the median is smaller than C, the quantile regression model for the median is unaffected by the censoring because the values which would have been larger than the median if they had been recorded at their true value rather than set to the maximum C still remain larger than the median after having been censored (set equal to C). In contrast, the mean will be affected by the censoring, and censoring thus results in a bias of the estimate of the conditional mean in standard linear regression. See Powell (1986) for a detailed discussion.

4.3 Interpretation of the results

The interpretation of the quantile regression results and the advantages of quantile regression over standard linear regression are best illustrated alongside a practical example. Thus far, we have fitted a standard linear regression model to the METPAS data, and found that the mean level of trust increases, on average, by 1.5 points (on a 10-50 scale) for every one point increase in PPIP (on a 1-7 scale). We then went on to discuss why this standard linear regression coefficient may be an inadequate summary of the relationship between PPIP and public trust, and leaves important questions unaddressed. These can be translated into the following set of research questions.

Research questions

1. Do perceptions of police information provision influence trust in the police in all members of the public? Or is there evidence that the least, average and most trusting individuals do not only tend to differ in their perceptions of

how well the police are keeping them informed, but are also affected differently by their perceptions of police information provision?

2. Can perceived information provision reduce disparities in levels of trust in the police within society?

The effect of perceived information provision at different quantiles of the trust distribution

To address the first research question about differential effects of PPIP on the low, middle and upper parts on the trust distribution, we need to estimate regression coefficients separately for a range of quantiles and compare them to each other. This is achieved by formulating a regression model for each of the quantiles of interest with PPIP as the explanatory variable and trust in the police as the dependent variable. Each model then predicts the conditional (on the value of the explanatory variable) trust score for that particular quantile.

To keep the illustrative example simple, *Model 1* is a univariate regression model with only two variables – PPIP as the explanatory and trust as the dependent variable, no control variables and no variable transformations. As mentioned earlier, the quantile regression model can be easily modified as to include polynomials and readily extended to the multivariate case; an example is given in a later *Model 2.* [6]

Table 1. Univariate regressions predicting trust in the police. Model 1.								
	mean	Q05	Q20	Q30	Q50	Q70	Q80	Q95
	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)
Explanatory variable								
Perceived police information provision	1.501***	2***	2***	2***	1.5***	1***	1***	1***
	0.021	0.092	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Intercept	29.968	17	23	26	31	35	37	41
(Pseudo) R^2	12.18%	7.20%	8.03%	9.76%	5.50%	1.74%	4.07%	4.90%
Legend : *** p-value <0.001 ** p-value<0.01 *p-value<0.05								
Summary statistics								
Trust: min.=10 (low trust) max.=50 (high trust) mean=37.14 S.D.=6.10								
Preceived information provision: min=1 (not good at all) max=7 (very good) mean=4.73 S.D.=1.45								
Data source: METPAS 2007/08-2009/10. Sample size n=37502								

Table 1 shows the estimated regression coefficients for a selected number of quantiles. *Figure 2* plots the quantile regression coefficients with 90 percent

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[6] Appendix I provides the Stata syntax for this and all further types of analysis presented in here. The METPAS dataset is not publicly available; the example in the syntax has thus been exchanged for one that uses a publicly available dataset, examining the relationship between income and happiness. See Hohl (2009) for the interpretation of the results for this example.

confidence intervals for the range of quantiles from the 1st to the 99th quantile. The dashed line is the standard linear regression line, with a 10 percent confidence interval around it.
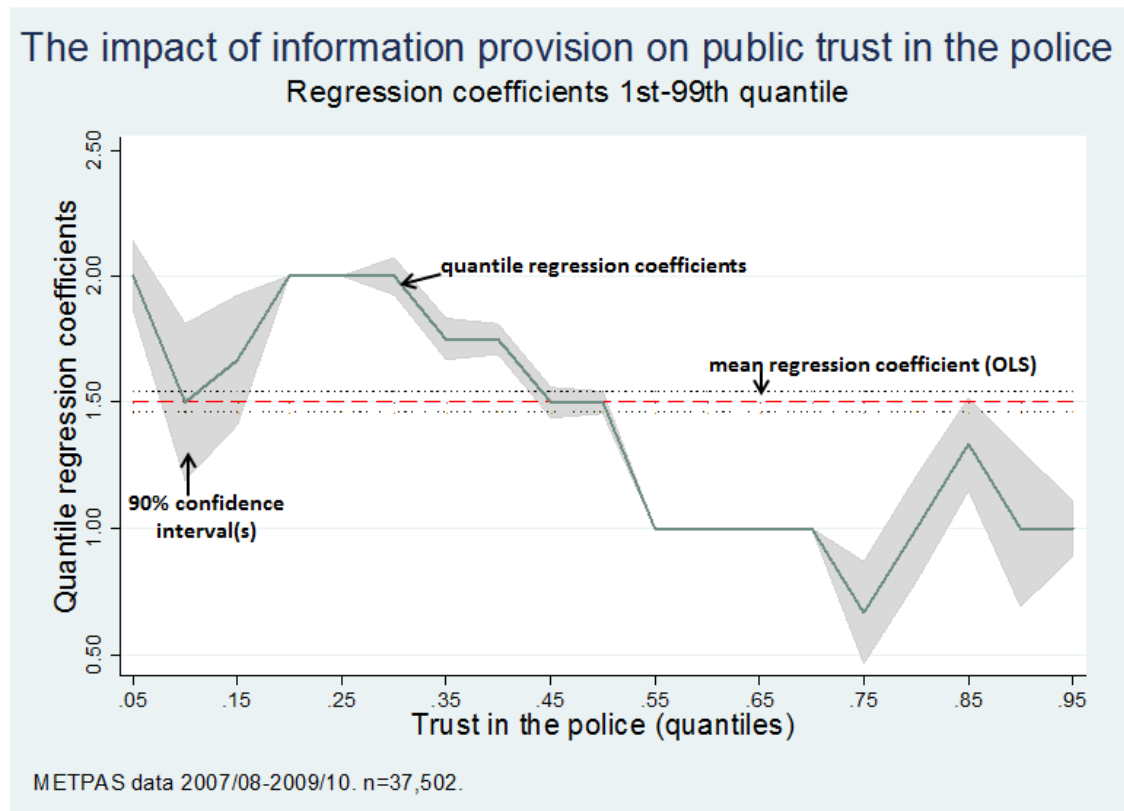

The impact of information provision on public trust in the police
Regression coefficients 1st-99th quantile

METPAS data 2007/08-2009/10. n=37,502.

Figure 1. Quantile regression coefficients of the perceived information provision effect on trust in the police (*Model 1*).

The results show that PPIP have a much larger effect on trust in the police at the lower end of the trust distribution than at the upper end of the trust distribution. For example, a one-point higher rating of PPIP is associated with an increase in trust by 2 points at the 5th quantile, but only with a 1.5 point increase at the median and the mean of the conditional life satisfaction distribution, and only with a 1-point increase for the 45% with the highest levels of trust.

The difference in the size of the regression coefficient for the 5th and 50th quantile and for the 50th and 90th quantile are both statistically significant with p-value<0.001.

The decline of the effect of PPIP on trust in the police as we move from the least to the most trusting individuals becomes obvious in *Figure 1*. Note that the apparent blip in regression coefficient size at the 10th and 75th quantile (and

correspondingly the spike at the 85t^h quantile) are unlikely to be meaningful as the large confidence intervals around them indicate high uncertainty about the value of the estimated quantile regression coefficients at these locations. Aside from these 'wobbles' the overlap of the confidence intervals around the quantile regression coefficients and the standard linear regression coefficient is confined to a narrow area the central part of the trust distribution. This means, while the standard linear regression coefficient is a good representation of how PPIP effects trust in 'typical' individuals at central locations, it significantly underestimates the strength of the effect of PPIP in on the least trusting citizens and overestimates the effect of PPIP on the most trusting citizens.

These findings suggests that the impact of PPIP is greater for the least trusting, and PPIP less important for the most trusting citizens. This finding has important policy implications: information is not an optional service that is 'nice to have' and merely good for maintaining trust in those who are already 'on the side' of the police, but a perceived lack of showing transparency and accountability through keeping the public informed appears to have detrimental effects on those citizens who have least trust in the police.

To illustrate how the interpretation changes in a multivariate regression model, a small set of standard control variables is introduced: ethnicity, age and gender. In addition, the PPIP variable is specified as a quadratic effect.

Table 2. Multivariate regressions predicting trust in the police. Model 2.	mean	Q05	Q20	Q30	Q50	Q70	Q80	Q95
	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)	b (S.E.)
Explanatory variable								
Perceived police information provision	2.76***	6.5***	2.38***	1.89***	3.56***	3.1***	1.43***	-1.95*
	0.10	0.28	0.25	0.22	0.14	0.18	0.22	0.77
Perceived police information provision (squared)	-0.146***	-.5***	-.0625*	0.00	-.241***	-.242***	-0.04	.333***
	0.01	0.04	0.03	0.02	0.02	0.02	0.02	0.08
Female (ref: male)	0.305***	0.00	.167***	.333***	.268***	.4***	.609***	0.10
	0.02	0.04	0.05	0.03	0.03	0.01	0.04	0.05
Age	-0.588***	0.00	-0.31	-1.33***	-.268***	-.4***	-.957***	-.905***
	0.06	0.10	0.21	0.15	0.07	0.01	0.07	0.14
Ethnicity (ref. white)								
- mixed	-0.467***	1.00*	-0.50	0.44	0.00	-.4***	-1.26***	-1.67***
	0.12	0.47	0.28	0.27	0.08	0.02	0.10	0.34
- asian	0.503***	1.00*	1.17***	1.56***	.607***	.725***	.217*	-0.52
	0.09	0.42	0.18	0.12	0.08	0.14	0.09	0.34
- black	-0.44***	1***	-.188*	-1.33***	-.536***	-0.04	-.609***	-0.48
	0.09	0.14	0.09	0.15	0.13	0.12	0.09	0.33
- other	1.39**	1.00	1.52	2.22***	1**	1.32***	1.04	0.00
	0.47	1.62	1.15	0.43	0.35	0.26	0.66	1.51
Intercept	26.20	8.00	22.33	24.78	25.80	28.94	33.04	46.48
(Pseudo) R^2	14.1%	8.9%	8.6%	11.3%	8.4%	3.7%	6.9%	6.6%
Legend : *** p-value <0.001 ** p-value<0.01 *p-value<0.05								
Summary statistics								
Trust: min.=10 (low trust) max.=50 (high trust) mean=37.14 S.D.=6.10								
Preceived information provision: min=1 (not good at all) max=7 (very good) mean=4.73 S.D.=1.45								
Data source: METPAS 2007/08-2009/10. Sample size n=37109								

Controlling for gender, age and ethnicity, the effect of PPIP on trust in the police is still statistically significant. The most substantial change comes from the quadratic specification of the PPIP variable. *Model 2* shows that the relationship between PPIP and trust is curvilinear. This means, the gains in confidence from a one-point improvement away from the poorest evaluations of police information provision (e.g. from 1 to 2 or from 2 to 3 on the 7-point PPIP scale) are higher than the gains in trust from moving from say point 4 to point 5, and become increasingly smaller as we move to the top end of the PPIP rating-scale.

The multivariate regression model confirms the declining effect of PPIP on trust in the police as we move from the least to the most trusting respondents. As in the univariate model, the mean regression coefficient significantly underestimates the effect of PPIP on trust in the least trusting individuals and overestimates it for the most trusting respondents. At the 95th quantile we even observe a negative effect of PPIP if PPIP is less than 6 on the seven point scale. The mean regression coefficient averages over the differential impact PPIP has on trust in the least trusting, 'average' and most trusting respondents, potentially leading to the erroneous conclusion that information provision might be an optional feature of a modern police service. The quantile regression findings

suggest the effect of a perceived lack of police transparency and accountable particularly detrimental at the low end of the trust distribution, i.e. those members of society who are least trusting in the police.

The effect of perceptions of information provision on disparities in public trust

Up to this point we have considered the differential effect of PPIP on trust in individuals. An aspect of this relationship we have not yet considered is how information provision plays out in disparities in public trust between different subgroups of the population (research question 2). Such disparities or inequalities manifest themselves in the scale (spread) and the skew rather than the location of the distribution.

Figure 2 shows the histograms of the observed trust scores for every level of PPIP. Superimposed are the regression lines the univariate *Model 1* predicts for the 5th, 20th, 30th, 50th, 70th, 80th and 95th quantile, together with the ordinary least squares regression line predicted for the mean. The graph gives a good illustration of how improvements in PPIP impact on the distribution of trust. Beginning with the histograms of the observed trust scores, the graph shows how the shape changes as we move from the lowest up to the highest rating of PPIP. For example, the spread of the conditional distribution decreases substantially as PPIP improve. The slight funnelling of the super-imposed quantile regression lines illustrates the differential effect of PPIP on trust: the slopes of the regression line for the 5th , 20th and 30th quantile are much steeper than those at higher quantiles and the regression lines become increasingly flat as we move up to the 95th quantile.
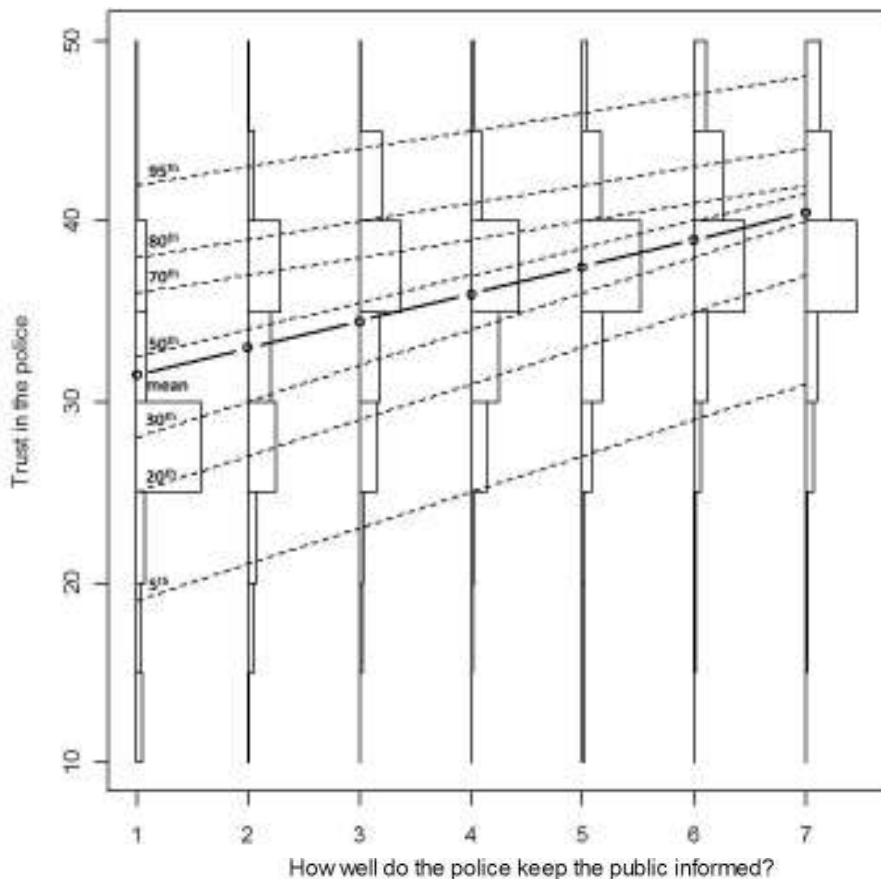

Figure 2. Predicted regression lines and histograms of observed trust scores (*Model 1*).

Further illustration comes from the fitted values reported in *Table 3*. The table shows the predicted level of trust at selected levels of perceived information provision based on *Model 2*. The control variables age, gender and ethnicity are fixed at their respective sample means.

The greater disparities in trust in the police within population groups that perceive a lack of police information provision (low PPIP) compared to population groups who feel the police are keeping them very well informed (high PPIP) is evidenced in the distance between the predicted level of trust for the 5th and the 95th quantile. While the two quantiles are 25.2 points apart amongst those with unfavourable PPIP, the distance shrinks to 14.5 points as we reach the group with the most favourable PPIP

Table 3. Examples of fitted values for trust in the police based on *Model 2*.									
	mean	Q05	Q20	Q30	Q50	Q70	Q80	Q95	Distance 5th to 95th quantile
Perception of information provision (7-point scale)									
1 (not at all well)	25.79	14.40	23.24	19.67	27.87	29.95	29.36	39.62	25.21
2	28.11	19.40	25.43	21.56	30.70	32.33	30.67	38.66	19.26
3	30.14	23.40	27.50	23.45	33.06	34.22	31.90	38.38	14.97
4	31.88	26.40	29.44	25.34	34.93	35.62	33.05	38.76	12.36
5	33.33	28.40	31.26	27.23	36.32	36.55	34.12	39.81	11.40
6	34.48	29.40	32.95	29.12	37.23	36.98	35.11	41.52	12.12
7 (very well)	35.34	29.40	34.52	31.01	37.66	36.94	36.02	43.90	14.49
Distances									
1st - 3th point	4.35	9.00	4.26	3.78	5.19	4.26	2.54	-1.24	
5th - 7th point	2.02	1.00	3.26	3.78	1.34	0.39	1.90	4.09	
Legend: Fitted values based on Model 2. All covariates fixed at their respective means.									
Data source: METPAS 2007/08-2009/10. Sample size n=37109									

The fitted values allow us to locate the origin in the variance decrease in the left tail of the trust distribution. While the predicted trust score for the 5th quantile stretches down to a score as low as 14.4 for those who with low PPIP, the 5th quantile within the 7th and highest PPIP band is located just below the midpoint of the scale (fitted value=29.40). Note that the difference in the predicted score for adjacent levels of PPIP would be equal to the regression coefficient estimated for that particular quantile if the relationship between PPIP and trust had not been curvilinear.

Figure 2 and the fitted values reported in *Table 4* are illustrative of how PPIP affect the spread and the shape of the trust in the police distribution. Hao and Naiman (2007) suggest a Scale-Shift Statistic (SCS) and a Skew-Shift Statistic (SKS) to quantify this effect on the scale and the skew of the dependent variable in a statistic. In order to calculate Scale-Shift Statistic (SCS), we have to pick the two quantiles that delimit the part of the distribution we are interested in, for example between the 5th and the 95th quantile or within the interquartile range (IQR) which contains the middle 50 percent of the population.

The SCS statistic is the regression coefficient of the higher quantile minus the regression coefficient estimated for the lower quantile. For example, the effect of information provision on variability in trust in the police within the sample according to the simple *Model 1* is

Interquartile Range: $\qquad$ $SCS^{(IQR)}= \beta(^{0.75}) - \beta(^{0.25}) = 0.67-2.00=-1.33$

1% trimmed distribution: $\qquad$ $SCS^{(0.01)}= \beta(^{0.99} - \beta^{(0.01)} = 0.33-2.33=-2.00$

The SCS shows that, based on *Model 1*, we expect a 1-point improvement in PPIP will narrow the interquartile range by 1.33 points and thus reduce the difference in the levels of trust between the least trusting (1st quantile) and the most trusting (99th quantile).

The Skewness-Shift Statistic (SKS) quantifies the effect of the explanatory variable on the skew of the response variable. Put simply, the SKS measures disproportionate scale shift below and above the median induced by the differential regression coefficients. In the present example where the trust distribution is negatively skewed. The SKS-statistic for the full distribution trimmed by 1% in each tail (for computation) suggests that a one-point improvement in PPIP results in a further increase in the left-skewness by SKS $^{(.99-0.01)}$= -1.48 as the tail of respondents with low trust in the police thins out as PPIP improve (see Appendix II for the SKS-formula and calculations).

In short, the results suggest that improvements in PPIP help to enhance trust in particular among the least trusting citizens. Because of the greater effect of PPIP

on the least trusting respondents, the left tail gets dragged in as information provision improves. As a result, the trust distribution not only reduces in spread, but also becomes less skewed which means smaller disparities in trust within a society.

- **Discussion**

Perceptions of information provision and trust in the police

Beyond what can be achieved with standard linear regression, the quantile regression approach makes an important contribution to the understanding of the relationship between PPIP - perceptions of police information provision - and trust. Standard linear regression underestimates the strength of the relationship between feeling ill-informed and low trust in the police. Feeling the police are not transparent and forthcoming in keeping the public informed is closely linked to a lack of and low levels of trust. Conversely, the link between PPIP is weaker in those with high levels of trust. Those with high levels of trust are not only less likely to feel ill-informed, but they are also less likely to be affected by their perception of police transparency in that regard. Standard linear regression only estimates the effect of PPIP on the mean of the trust distribution and thus fails to detect these differences, and the researcher might erroneously conclude that information provision will have the same effect on everyone. In addition, the effect of PPIP on trust is curvilinear (quadratic), that is, the effect of PPIP becomes smaller as levels of PPIP improve. Levels of trust vary more amongst those with low levels of PPIP, in particular amongst those with low levels of PPIP the trust distribution has a longer and thicker tail of respondents with low levels of trust. Amongst those with high level of PPIP trust distributions are more compact and low levels of trust are less likely. This finding suggests that information provision can help to both increase the level of trust and reduce disparities in trust in the police within in a society by enhancing the level of trust in the least trusting citizens.

These findings have important policy implications. Information provision is not just a nice gesture of service-oriented modern policing or merely a tool of maintaining confidence in those who trust the police already, rather it appears

information provision is important because a perceived lack of transparency and accountability contributes to low levels of trust.

Information provision aimed at enhancing confidence needs to demonstrate police engagement with the concerns and priorities of the local community, transparency and accountability for what police are doing to address them and report their outcomes back to the community. Information provision understood in this way uses information materials to enable a two-way communication between the police and the wider public. The 'good practice model' (Wünsch and Hohl 2009) outlines how this can be practically done. In short, information materials of such kind need to pertain to the local area, report the crime and disorder priorities the police have identified through talking to members of the local community, the actions police are undertaking to address them and the outcomes of such actions, need to be written in an inclusive easily understandable manner and finally, make the police accessible by providing contact details.

Methodological remarks

Information provision does not have the same effect on confidence in the police in all citizens. The strength of the association between perceptions of information provision and trust increases as we move from the most to the least trusting citizens. Variability in the levels of trust decreases as perceptions of information provision improve because improvements in perceptions of information provision 'bring in' the tail of the trust distribution and alleviate low levels of trust. These aspects of the relationship between public perceptions of information provision and trust in the police unfold as we move beyond the narrow view that standard linear regression has to offer. Standard linear regression modelling has advanced how social scientists subject data to a systematic analysis, and shaped the ways in which research questions and hypotheses are formulated within a statistical model. However, this comes at the cost of leaving some potentially important research questions unasked, and consequently, unanswered. At the stages of research design, data analysis and interpretation, standard regression techniques constrain the scope of the inquiry

such that theoretically interesting aspects of the effect of the explanatory variables on the dependent variable may be neglected. Quantile regression widens the scope of the analysis to allow the researcher investigating how other parts of the distribution of the dependent variable respond to changes on the explanatory variable, to uncover differential regression effects, and to examine the effect of the explanatory variable on diversity and inequality (variance and skew) in the dependent variable.

This renders quantile regression particularly useful for policy directed research. Policy interventions are often targeted towards subgroups of the population located at the extremes of the distribution, for example the most deprived citizens, the least performing students or those at the bottom of the wage distribution. It may thus be useful to investigate how these groups, rather than those located around the mean of the distribution, respond to a particular policy intervention.

Some examples of the application of quantile regression for these kinds of research problems can be found in the areas of labour economics, and more recently, also in educational research. Quantile regression has been used to analyse changes in the wage structure and in particular the return on schooling in the United States (Buchinsky 1994), to investigate the effect of education on wage inequality (Martins and Pereira 2004), the gender gap in wage (Garcia, Hernández and Lopez-Nicolas 2001) and to uncover differential effects of education on income across Europe (Prieto-Rodriguez, Barros and Vieira 2008). Examples from educational research are Reeves and Lowe (2009), and Eide and Showalter (1998) who used quantile regression to study the differential effect of school quality on performance in least, typical and best performing pupils; and Penner (2008) who applied quantile regression to analyse the gender gap in extreme mathematics achievement. Krueger and Schkade (2008) used quantile regression to assess whether survey questions measure low, medium and high levels of subjective well-being with equal reliability. Beyond this application in psychometrics, applications outside economics and educational research are rare and quantile regression appears to be largely unknown in the social sciences.

Common to all of the above examples is that quantile regression is much better suited to the research question than standard linear regression, simply because research questions about differential effects and effects on inequality are essentially about distributions, not means. The preoccupation with mean-focused statistical tools like standard linear regression has shifted attention away from the information that is contained in the full distribution.

It is important to point out that this is not a shortcoming of standard linear regression per se. As noted earlier, standard linear regression and correlations have merits in providing a parsimonious summary of the relationship if this is useful for the research question and does justice to the data. Rather, the problem lies in the 'mean focus fallacy' that comes with routine (over-)use of standard linear regression analysis. Statistical tools are not universal. Each method singles out particular aspects of both the theory and the data, and the choice of the method delimits the scope of empirical validation and discovery. With the decision on the statistical tool comes a decision on which properties of the data are considered in the analysis, and which are left out. In the case of correlations and standard linear regression, we single out the means of the explanatory and response variables and decide to ignore all other properties on these variables, including scale and skew – and with them all research questions which require analyses of these properties. Furthermore, most effort goes into the specification of the parts of the model we call parameters (like regression coefficients), while often very little attention is paid to those part that we call assumptions (for example, homoscedasticity). As this article aimed to show for the case of standard regression analysis, it is often precisely the model assumptions where research questions on important aspects of the relationship are silenced and theoretical presumptions survive unchallenged.

The mean focus fallacy of standard linear regression analysis is an instance of a general methodological challenge. Once a statistical tool is established as the conventional method within a particular research programme, researchers are prone to 'forget' to ask types of research questions and fail to empirically scrutinise those parts of a theory that cannot be translated into model parameters

within the conventional method of analysis. The research questions become adapted to the statistical tool, rather than the other way round.

The mean focus fallacy therefore resonates with long standing concerns raised by statisticians, philosophers of science and researchers within the social sciences alike. The literature on model selection and model specification converges on the point that the choice of the statistical model needs to be an informed decision and requires careful alignment between theoretical hypotheses, properties of the data and the statistical model, including its assumptions. Statistical analysis cannot be a matter of merely putting new data through a standard tool that has become the default choice within a particular research programme (see for example Freedman 1991, Berk 2004, Taagepera 2008).

How influential the choice of the empirical tool is on scientific theory has also been discussed within the philosophy of science. Hacking (1983) argues that the empirical method interacts with the discovery and validation of scientific theory at various stages of the research process. Galison (1987) agrees with Hacking in that familiarity with a particular empirical tool shapes substantive theory. Using the example of experiments in physics, he demonstrates the important role of (dis-)continuity in methodology for conceptual change in scientific programmes. Making the case for research in psychology Gigerenzer (1991) views empirical tools as a window into the process of conceptual discovery and theory formation. In an historical analysis, Gigerenzer traces how the concepts of probability and statistical inference underlying the statistical methods used in cognitive research inspired new metaphors and concepts in Cognitive Theory. He concludes that familiarity with the statistical tools played an essential role in the discovery and the acceptance of the theory of mind as an 'intuitive statistician', and refers to this phenomenon as the 'tools-to-theories heuristic' in the discovery of scientific theory.

What, then, is the way forward? As Maslow (1966: 15-16) put it, 'it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail'. Familiarity with a broader range of statistical tools might be a start. Knowledge of a larger set of statistical methods widens the scope of research questions a

researcher considers asking, and increases the chances of picking a tool that is appropriate for the research question and the data at hand.

This article aimed to show how quantile regression can help overcoming the limitations and pitfalls of the mean focus fallacy that comes with routine use of the standard linear regression tool. The empirical analyses shed new light on the relationship perceptions of police information provision and public trust in the police. Further application of the method in other areas of social research might inspire interesting new research questions and help to address existing phenomena more appropriately.

Scientific curiosity should not come to a halt once the empirical journey passes through the statistical tool box. And as the example shows, straying from well-trodden main roads and taking a new route can offer interesting new views on a seemingly well-known landscape.

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Appendix I: Syntax teaching example with a publicly available dataset.

// Download dataset from
http://ess.nsd.uib.no/index.jsp?year=2007&country=&module=download //

// Preparation of the dataset //
encode cntry, generate(country)
label list country
keep if country==6
tab country
gen swl=stflife
label variable swl "satisfaction with life"
label values swl stflife
recode gndr 1=0 2=1, gen(female)
label variable female female
label define female 0 "male" 1 "female"
label values female female
label variable age age
gen agesquare=age*age
label variable agesquare agesquare
gen income=hinctnt
label variable income "income"
label define income 0 "refused/dk" 1 "<150 Euro" 2 "150 - 299 Euro" 3 "300 - 499
Euro" 4 "500 - 999 Euro" 5 "> 1000-1499 Euro" 6 "1500-1999 Euro" 7 "2000 - 2499
Euro" 8 "2500 - 2999 Euro" 9 "3000 - 4999 Euro" 10 "5000 - 7499 Euro" 11 "7500 -
10,000 Euro" 12 ">10,000 Euro"
label values income income
recode income 0=.
gen incomesquare=income*income
label variable incomesquare "income (squared)"
recode mnactic 3=1 4=1 1=2 5=3 6=3 8=4 2=5 7=6 9=6, gen(workstat)
label define workstat 1 "unemployed" 2 "working" 3 "retired/disabled" 4
"housewife" 5 "student" 6 "other"
label values workstat workstat
label variable workstat "work status"
recode workstat 1=1 .=. else=0, gen(unemployed)
label variable unemployed unemployed
label define unemployed 0 "else" 1 "unemployed"
label values unemployed unemployed
codebook swl income incomesquare female age agesquare unemployed

// Table 1 //
regress swl income
estimates store OLS
sqreg swl income, quant (.05 .1 .3 .5 .7 .9 .95)
estimates store QR
estimates tab OLS QR, b(%9.3g) se(%9.3g)

// Figure 2//
bsqreg swl income
grqreg, cons ci ols olsci title(intercept income)

// Significance test equivalence of regression coefficients across quantiles //
eststo: sqreg swl income, quant (.05 .1 .3 .5 .7 .9 .95)
test [q5]income = [q50]income
test [q10]income = [q50]income
test [q50]income = [q70]income
test [q50]income = [q90]income

// Table 2 //
regress swl income incomesquare female age agesquare unemployed
estimates store OLS
sqreg swl income incomesquare female age agesquare unemployed, quant (.05 .1 .3 .5 .7 .9 .95)
estimates store QR
estimates tab OLS QR, b(%9.3g) se(%9.3g)

Appendix II

1. The model-based skew shift according to Hao and Naiman (2007: 73)

$$SKS^{(p)} = \left[(\beta^{(1-p)} - \alpha^{(1-p)} - \beta^{(.5)} - \alpha^{(.5)}) / (\alpha^{(1-p)} - \alpha^{(.5)}) \right] / \left[(\beta^{(.5)} + \alpha^{(.5)} - \beta^{(p)} - \alpha^{(p)}) / (\alpha^{(.5)} - \alpha^{(p)}) \right] - 1$$

where
p = quantile
β = regression coefficient
α = intercept

2. Stata syntax to obtain quantile regression coefficients and intercepts for $SKS^{(.25)}$

sqreg swl income, quant (.25 .5 .75)
3. Calculation of the SKS statistic for the interquartile range:

$$SKS^{(0.25)} = \left[(\beta^{(.75)} + \alpha^{(.75)} - \beta^{(.5)} - \alpha^{(.5)}) / (\alpha^{(.75)} - \alpha^{(.5)}) \right] / \left[(\beta^{(.5)} + \alpha^{(.5)} - \beta^{(.25)} - \alpha^{(.25)}) / (\alpha^{(.5)} - \alpha^{(.25)}) \right] - 1$$

Happiness example:
$SKS^{(0.25)}$ = [(0.200 + 7.000-0.375 - 4.630)/(7.000 - 4.630)]/
[(0.375 - 4.630 - 0.571- 1.710)/(4.630 - 1.710)]-1 = -1.414

Trust in the police example:
$SKS^{(0.1)}$ =[(0.3334 +47.6667 -1.5 -31)/(47.6667 -31)]/[(1.5 -31 – 2.3334- 9.6667)/(31 - 9.6667)]-1

CHAPTER 6:   CONCLUSION

This chapter draws together the findings from the four papers. It examines how well the theoretical framework has fared in explaining how media and police information provision do or do not influence public trust in the police. The chapter discusses what has been learnt about the role of the media and police information provision in shaping public trust in the police. The limitations of the thesis are outlined together with propositions on where research might go from here. In this context, the chapter concludes with some reflections on the characterisations of the public that are implied in different explanations of how media and police messages affect public trust in the police.

Summary of research question and theoretical framework

How does information – from the media or the police – influence public trust in the police? The thesis aimed to address this question based on procedural justice theory adapted to the British context. Procedural justice theory postulates that cooperation and compliance with the police and the law flow from the perception that they are legitimate and trustworthy authorities. Trust and legitimacy, in turn, are based on believing that the police have the right motives and perceiving a 'solidarity' or alignment in morals, values and norms between the police and the community. Motives and morals are not directly observable, and Tyler argues that people infer them from the way the police act towards them – whether they show fairness and respect, listen to and take one's view into account (Lind and Tyler 1988, Tyler and Huo 2002, Sunshine and Tyler 2003). In the British context, the police community relationship is of particular importance (Loader and Mulcahy 2003, Reiner 2010, Garland 2001, Girling et al. 2001). The thesis thus uses an adaptation of Tyler's procedural justice model, called the confidence model. The confidence model has three

components: perceptions of community engagement, perceptions of procedural fairness and perceptions of police effectiveness (competence). The 'perceptions of community engagement' component is added to account for the importance of this aspect of policing in the British context. In contrast to Tyler's original model, the confidence model suggests that the public infers the motives, characteristics and values of the police not only from perceptions of procedural fairness in direct encounters, but also from perceptions of police community engagement. Previous research has shown that procedural justice theory and the confidence model are powerful in explaining public trust in the police across population groups, including ethnic minorities, victims of crime, and those with (and without) recent contact with the police (Stanko and Bradford 2009, Hohl et al. 2010, Bradford and Jackson 2010, Bradford et al. 2009, Jackson et al. 2009, Jackson and Bradford 2010). The empirical studies presented here are the first to apply the confidence model to the explanation of the effects of information, from the media and directly from police, on public trust and confidence in the police.

Summary of the individual papers

The first paper focused on how the press influences public trust in the police. The empirical study combined a large-scale content analysis of reporting on policing in five major newspapers between April 2007 and March 2010 with population representative survey data on public trust fielded continuously over the same three-year period. The study found little evidence for an effect of the staple of media reporting on policing – ongoing crime investigations – on public trust in the police. Despite the great variability in media reporting over the three-year period, with some high profile events and stretches of both high and low intensity of reporting on policing, public trust in the police remained very stable. However, reporting on police misconduct, on how the police treat citizens in direct encounters and on acts of police community engagement have a small effect on public confidence. These findings are consistent with the predictions of the confidence model: public trust is rooted in perceptions of procedural fairness and police community engagement more than in judgements of police

effectiveness and competence in dealing with crime. Yet, effect sizes are small, only significant in some newspaper readerships. And crucially, the types of reporting that have been found to have a statistically significant effect – reporting on police community engagement and procedural fairness- are rare, seemingly too rare to have a substantial impact.

The second and third paper moved from information the public receives through the media to information received directly from the police. The two papers draw on the same empirical study, a 'real-world' quasi-experiment that tests the impact of local police newsletters on public trust. The first gives a more detailed account of the empirical study and focuses on the theoretical underpinnings and implications (published in the *British Journal of Criminology*). The second paper advances a 'good practice model' of police communication and focuses on the practical implications of the findings (published in *Policing*). The newsletters were designed on the basis of the confidence model and aimed to demonstrate police engagement with the issues and concerns of the local community, transparency with regard to the actions the police had undertaken to address them as well as to show accountability in reporting the outcome of these actions back to the community. The results suggest that such newsletters have a significant positive effect on perceptions of police community engagement and overall confidence and a buffering effect on perceptions of police effectiveness when these are challenged by current events. The study did not find a statistically significant effect on perceptions of how police officers treat people in direct encounters (procedural fairness). Overall, the study gives support to the confidence model and suggests that direct communication via local newsletters is an effective way of engaging with the local public, and in this way, can enhance public trust and confidence in the police.

The fourth and final paper drills deeper into the role of perceptions of police information provision in public trust in the police. The paper introduces quantile regression and shows how it can complement standard linear regression to address a broader range of research questions such as this one. It finds that

information provision does not have the same effect on trust in all citizens. Those with low levels of trust are not only more likely to feel ill-informed about what police are doing, their trust is also more strongly affected by the perceived (lack of) information provision from police. In other words, the strength of the association between perceptions of information provision and trust increases as we move from the most to the least trusting citizens. This finding suggests that information provision is not just an optional feature of service-oriented modern policing or merely a tool for engaging with and maintaining confidence in those who trust the police already. Rather it appears that information provision is particularly important for those with low levels of confidence.

Conclusions on the theoretical framework

Overall, the findings provide evidence in support of procedural justice theory and the confidence model. Motive-based trust, inferred from procedural fairness and community engagement, is more central to public trust in the police than perceptions of police effectiveness in carrying out their duties. The media study (paper 1) suggests that media messages about procedural fairness and police engagement can have a statistically significant effect on public trust in the police. There is little evidence for media reporting on how police investigate crime cases having a significant effect on public trust in the police. The newsletter experiment (papers 2 and 3) also provides strong evidence that police information provision aimed at demonstrating police community engagement has a confidence-enhancing effect. It did not test an alternative newsletter designed to demonstrate police effectiveness in dealing with crime, which means based on this experiment alone it cannot be ruled out that information provision of this kind would also have a confidence-enhancing effect. Yet, in conjunction with previous studies and the media study, the findings add support to the confidence model and the underlying procedural justice theory.

The findings also show that perceptions of procedural fairness alone are not sufficient to explain motive-based trust in the British population. The observed

confidence-enhancing effect of the newsletter was due to the positive effect it had on perceptions of community engagement – the newsletter had no statistically significant effect on perceptions of procedural fairness. Similarly, reporting on police community engagement accounts for most of the (small) effect of the media on public trust observed in the media study. With regard to the fourth paper which explored the relationship between perceptions of police information provision and public trust, it can be argued that feeling informed about what the police are doing locally is an aspect of police community relations more than it is an expression of procedural fairness. In sum, had Tyler's model been used in its original form, much of the effect of information (from the media or police) on public confidence would have been undetected or unexplained.

The findings from the media study suggest that different newspaper readerships are affected by different types of events, and affected differently by reporting on the same type of event. This might indicate that different newspaper readerships hold different police images and that the values, norms and ideas of social order the police are thought to represent and defend might not be universal. Whilst explorations of police images are beyond the focus and what the capabilities of the quantitative study presented here, the findings hint towards the co-existence of diverse and even conflicting police images in the public mind. This resonates with the literature on police images in the media (Reiner 1997, Reiner et al.2000, 2001, Beckett 1997, Leishman and Mason 2003, see also Loader and Mulcahy 2003).

What is the role of information from the media and police in public trust?

The media study only found very small - almost null- effects of newspaper reporting on policing on public trust. This is a very typical finding in media studies. Within the media research literature there is much debate about why the vast majority of media studies do not find stronger effects. Explanations range from declaring it a mostly methodological problem of disentangling media effects – the media are too interwoven with and omnipresent in our daily lives- to arguing that the audience is using the media in an attitude-reinforcing way that makes attitude change through the media a rare occurrence (Livingstone 1996). Such general debates are likely to apply also to the case of media effects on public opinions of and trust in the police.

In addition, one may speculate – and empirically test in future research – whether media reporting has a different effect in different subgroups of the population. For example, those who had recent contact with police or have been a victim of crime might be affected differently by press reporting on the police. It might also be the case that it is local press and news stories that pertain to the immediate neighbourhood which affect public perceptions more powerfully. One direction of future research might therefore be to collect media data on local press reporting as opposed to London-wide stories and relate these to differences in levels of public trust between London boroughs or wards in a multilevel regression approach. Furthermore, the media study presented here used the standard overall measure of trust in the police – the 'good job' question - as the key dependent variable of interest. One might speculate that it is perhaps confidence in the police in London as a whole rather than confidence in the police locally which is shaped by press reporting. The preliminary findings of such analyses do not result in conclusions substantially different from those presented in here.

In conclusion, the findings from this study contributes to the widening of the discrepancy between the common notion that the media are powerful in shaping public opinion and the direct effect it has on politicians and police

organisations on the one hand, and scientific studies of media effects (which find only small effects) on the other. If one looked at the evidence only, the police should expend fewer resources on attempting to influence the media, and more resources on directly communicating with the public.

The newsletter experiment and the quantile regression study presented in this thesis find notable effects of police information provision and public perceptions of it. The findings suggest that direct communication with the public should be a key element of policing strategies aimed at securing public support for police. Previous research also found that information provision can have a positive effect on public opinions of the criminal justice system, (Roberts and Hough 2005, Singer and Cooper 2008, Chapman et al. 2002, Salisbury 2004), yet most of these studies only found relatively small effects, and it has also been suggested that even these effects might be methodological artefacts (Feilzer 2009). One needs to pay attention to the type of information provision that has been studied here. Feilzer (2009) showed that the public appears to be distinctly uninterested in facts about the criminal justice system, and previous studies that found only small effects tested materials that were aimed at educating the public about crime facts and 'correcting' perceptions.

Based on the findings from the newsletter study presented here and the propositions of the confidence model one might speculate that precisely this is why some forms of police information provision are more successful in enhancing public trust than others: whether direct communication is understood as a way of engaging with the public, or one of correcting the public in their perceptions. I shall return to this distinction between a 'facts education' and 'engagement' approach to police communication in the final section. Future research is required to test this proposition, including testing the effectiveness of different forms of police communication, and tracking the effect of information provision over time. The newsletter experiment presented here tested the short-term effect of a one-off newsletter. Based on the data available it

was not possible to track its longer term impact and examine how long- or short-lived the observed increase in public trust was.

Police information provision is not entirely unproblematic. Information provision could be used as 'empty' marketing – a substitute rather than an element of actual community engagement - or even as a tool to manipulate or deceive the public. This, of course, raises questions about how to ensure police information provision serves the purpose of and adheres to principles of transparency, truthfulness and accountability. The community plays an important role in this. An unpublished follow-up study to the newsletter experiment conducted by the author for the Metropolitan Police London suggests that communities are not easily blinded or manipulated by police information provision, and police newsletters can backfire if their content does match local experiences. In order to have a positive effect, newsletter need to reflect the crime and disorder issues as the community experiences them. Newsletters also need to be part of actual community engagement policing. Filling police newsletter with relevant content involves the police knowing, understanding and addressing these local concerns, and taking actions on which they can report in the newsletter. This might not always be straightforward. 'The public' and 'the local community' are not uniform groups, but consist of subgroups with differing perceptions of crime and disorder, diverging ideas of what constitutes disorder, and conflicting needs and priorities.

Methodological conclusions
The main methodological contribution of the thesis has been made in Chapter 5. The quantile regression analysis of the relationship between perceptions of police information provision and public trust in the police showed that the least trusting citizens are not only more likely to perceive a lack of police information provision, but are also more strongly affected by it. The analysis also showed that information provision can reduce disparities in public trust in the police by helping to bring in the 'tail end' of those who are least trusting. These aspects of

the relationship between feeling informed and trust in the police unfold as we move beyond the sample mean, and examine how perceived information provision relates to trust in other sections of the trust distribution. The paper explained how two properties of standard linear regression preclude this type of analysis (regression on the mean and constant variance assumption). It formulated four diagnostic questions that help identify research problems for which standard linear regression is often used but which it cannot address appropriately. This may lead to invalid inferences and can leave important aspects of the relationship between explanatory and dependent variable undiscovered (the mean focus fallacy). The paper proposed that quantile regression is a useful complementary tool. The recognition of the mean focus fallacy and the availability of quantile regression analysis have theoretical and practical implications. With regard to theory building and testing, criminologists may find that the relationship(s) between explanatory and dependent variables do not generalise from the mean to the entire distribution, and that such variation in the effect of the explanatory variables and the dependent variable can have significant implications. It requires considering more complex mechanisms through which the explanatory variable affects the dependent variable. The four diagnostic questions suggest that more attention should be given to the entirety of the distribution of the dependent variable, its tails, spread and skew. Regression on the mean is a convenient and parsimonious summary of the relationship between the explanatory and dependent variable if this is desired, however not always helpful and statistically adequate. If the use of quantile regression becomes more widespread, this may have implication for the measurement of variables. Quantile regression requires the dependent variable to be genuinely continuous, the current standard four to six point range of response scales are not suited to quantile regression analysis. The use of quantile regression may also have practical implications. In particular policy makers who aim to segment the public and target policy measures to some of them may benefit from quantile regression. For example, the police may want to tailor information provision campaigns to those segments of the population which

are most likely to require more police communication – according to the quantile regression findings those with low levels of trust in the police.

Characterisations of the public

Returning to the idea of 'facts education' versus 'engagement-oriented' police newsletters, these two approaches to information provision imply very different characterisations of the public. In short, the 'facts education' approach locates the origin of declining trust and diminishing support for the police in the public's deficit of knowledge. In contrast, the 'engagement' approach locates the origin of the decline in confidence in a deficit in the two-way communication between the police and the public.

In the 1990s, the prevailing notion of the public was that of deficiency – in knowledge, and related to that, deficiency in a supportive and trusting attitude towards the criminal justice system. Whilst recorded crime rates were falling, the public became increasingly - 'irrationally' - concerned about crime and public trust in the police declined. The solution was readily identified; a more knowledgeable public would have to be less fearful of crime, more confident in the police and more positive towards the criminal justice system. Yet, such approaches were rather ineffective. Chapman et al. (2002) and Salisbury (2004) only observed very small positive effects of information materials that were designed to convey facts about crime and the criminal justice system, aimed at educating the public.

This conception of the public is not unique to the criminal justice system. Bauer et al. (2007) in their review of the past 25 years of survey research on the public understanding of science, describe how up until 1985, the unsatisfactory levels of public support for new technologies, such as gene - or nanotechnology, were attributed the public's deficit with regard to knowledge. Survey questions were used as tests of scientific knowledge and it was concluded that 'science literacy' was low. The way to enhance public support for science was hence that of sustained education throughout people's life times. Mistrust and negative attitudes towards science were seen as a direct result of the knowledge deficit.

The authors note that this definition of the knowledge–attitude relationship practically precludes a knowledgeable person from having a negative attitude towards science. Yet, attitude research has consistently found that there is only a weak link between greater knowledge and more positive evaluations of science and technology. Greater knowledge affects the quality, not the positivity of attitudes. Bauer and colleagues point out that having better knowledge about a subject makes people more likely to form an opinion about it rather than not having an opinion, and makes attitude change less likely. Bauer and colleagues describe what followed as a shift from a 'knowledge deficit' to an 'attitude deficit' – the public were not positive enough about science. What followed was an era of public reassurance and confidence building policies.

Returning to policing, one can observe a strikingly similar shift in focus. In the late 1990s, policy makers, with the Home Office at the forefront, moved towards identifying the 'drivers' of trust and confidence in the police, in order to find ways of alleviating the public's deficiency in trust and support.

Bauer and colleagues (2007: 84) claim that both forms of deficit, in knowledge and in trust, feed the "institutional neuroticism, anxieties and lack of generosity amongst scientific actors vis-a-vis the public. The deficit model is a self-serving rhetorical device and at the heart of a vicious circle: the *public* cannot be trusted." Because it is not possible to simply disqualify the public from the debate for lack of sufficient knowledge, perhaps the public can be made to trust the experts and policy makers instead. One might speculate that the relationship between the police, policing policy makers and the public suffers from similar dynamics. The parallels in characterisations of the public implied in the focus of research and programmes targeted at enhancing public confidence, including police communication, are suggestive.

What emerges from the findings of this thesis is that what matters for public trust in the police is not so much the facts about police effectiveness in dealing with crime, crime trends or the workings of the criminal justice system. What

matters most are messages about police community engagement, from the media and even more so, directly from the police. Enhancing trust and confidence in the police is not a matter of educating a public that is deficient in knowledge, or convincing a public that is deficient in trust. It is about engaging with a public that connects to the police through perceptions of shared values, morals and norms and feeling that the police listen, understand and respond to the concerns of the community. In short, it is about establishing a two-way communication between the public and the police, where both sides speak and listen.

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