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'Channel shift': Technologically mediated policing and procedural justice

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Abstract
In recent years, police forces in the United Kingdom have introduced various technologies that alter the methods by which they interact with the public. In a parallel development, many forces have also begun to embrace the concept of procedural justice as a method through which to secure legitimacy and (in turn) public compliance and cooperation. What has not received sufficient attention, within policing or academia, is the extent to which these two trends are compatible, with the procedural justice literature still predicated on an assumption that police–public 'contacts' or 'encounters' are in-person. The effect of technologically mediating police–public contacts on 'policing by consent', is therefore unknown. In this article, we focus specifically on the possible implications of the Single Online Home (SOH) (a portal through which the public can report crime, get updates on cases, give feedback and pay fines, among other things, which is currently being rolled out across forces), considering 'interactions' between police and public where there is no physical co-presence. Noting the unique context that is policing, we draw on the limited existing research on procedural justice encounters in technologically mediated contexts to explore whether procedural justice theory is 'future-proof' for a policing context increasingly reliant on such encounters. We conclude that, through empirical research, we must update our conceptual understanding of what 'contact' can mean, and accept that current developments may in fact be transforming relationships rather than simply facilitating existing ones.

Keywords
Policing, police, technology, visibility, contact, procedural justice, legitimacy

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Introduction

In a context of rapid societal and technological change, combined with pressure to operate more efficiently, police forces

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in the United Kingdom (UK) have introduced various technologies that alter the methods by which they interact with other criminal justice actors, internally with colleagues and – crucially – with the public. The introduction of body-worn video, mobile data terminals and the Single Online Home (SOH; an online portal for the public to report issues via standardised a form or Live Chat, get updates and apply for licences among other things), as well as increasing numbers of police social media accounts, mean that police–public 'contact' is increasingly likely to be technologically mediated in some capacity. Many forces are pursuing 'transformation' agendas with a strong technological element for the purposes of efficiency, and the term 'channel shift' is being used within policing to describe efforts to encourage the majority of public contacts to take place using a range of technologically mediated forms.

Alongside this, many forces have committed to reform their activities to better reflect a large body of research that underlines the importance of procedural justice in securing legitimacy and (in turn) public compliance and cooperation. The most visible example of this trend is His Majesty's Inspectorate of Constabulary and Fire & Rescue Services 'PEEL' inspections (the L stands for legitimacy).

What has not received sufficient attention, within policing or academia, is the extent to which these two trends are compatible. Legitimacy is central to police operations, in terms of the public's willingness to cooperate and accept the decisions of criminal justice actors (T Tyler, 2003, 2006). At the core of procedural justice theory lies the idea that people attend closely to the quality of interactions with authority figures such as police, particularly across dimensions of respect, neutrality, transparency and 'voice'. Although it is currently being refined in a number of ways (for example, Bradford et al., 2015 on social identity; Radburn et al., 2018 on group encounters; Nix et al., 2015 on collective efficacy), an unexplored assumption persists within procedural justice theory: that police–public 'contacts' or 'encounters' are between two humans.

We suggest that technological developments have been initiated with little regard to how they will be received by the public or what differences in reception there may be between particular 'publics'. As such, their effect on police–community relations and 'policing by consent' is unknown.

Strategic context

Several policing initiatives have led to an increase in technologically mediated police contact. In this article, we focus on online contact, specifically the possible implications of the introduction of the SOH,[1] considering 'interactions' between police and public where there is no physical co-presence. The SOH is the most significant manifestation of the National Police Chiefs Council's (NPCC) Digital Public Contact portfolio, with all 43 forces in England and Wales currently being approached to 'onboard' to a system designed to provide 'nationally consistent, locally branded services, brought together in a single "digital police station"' (CDS, n.d.). Without ever encountering a human, wherever a user is in the country, it is intended that they can visit a force website and 'report' (a crime, a traffic incident, a missing person, a fraud or – until recently – a COVID-19 breach), 'tell us about' (possible terrorist activity, a planned event, 'something you've seen or heard' or add information to an existing case), 'apply or register' (for a police vacancy, for a firearms licence, for compensation, or pay a fine for a road traffic offence), 'request' (a collision report, your fingerprints or an Intellectual Property licence) or provide 'feedback' (including 'thanks and complaints' and feedback on the website itself).

The National Police Chiefs Council (NPCC, n.d.) states that '[p]ublic expectations of how they interact with policing are changing. The public now expect us to have a significant online presence, with a similar level of functionality and ease of use to other services they access on a daily basis'. Centred around principles of simplicity, reliability and transparency, the Digital Public Contact portfolio aims to allow for 'reporting and tracking online', believing that this will help 'to improve the police response and quality of victim support' (NPCC, n.d.). In some forces, efforts to move to more 'digital ways of working' have been explicitly linked to increasing 'public confidence, participation and satisfaction' and, in turn, legitimacy (Accenture, n.d.), although this appears to be an unproven assumption. Police intentions appear to be towards increasing 'standardisation' and the 'consistency' of encounters with the public to manage demand, improve the quality of contacts and, in turn, the quality of relationships.

To date very little research has explicitly considered what impact increasing technological mediation will have on public trust and police legitimacy, or indeed whether what we know about procedural justice still applies in encounters of this type. In what follows we draw on the limited existing research on procedural justice in technologically mediated contexts to attempt to inform the policing context specifically. We note, of course, that policing is a unique and symbolically loaded context and hence conclude that empirical research specifically in this area is essential if we are to understand whether procedural justice theory is 'future-proof' for a policing context increasingly reliant on technologically mediated encounters. We start with an examination of the inherent assumptions present in the extant scholarship on procedural justice and then consider what we know about accessibility and contact in policing. Next, we discuss the literature on

human interactions with technology before embarking on a detailed discussion of the core elements of procedural justice theory and why considerations of the role of technology are crucial to these in the context of contemporary policing.

Assumptions in the existing procedural justice literature

One result of the current focus on procedural justice theory in the policing literature has been the extent to which it has directed attention toward everyday, mundane, encounters between police officers and citizens as the 'moments' in which trust and legitimacy are formed and reproduced. Yet research on procedural justice in policing contexts routinely makes unexplored assumptions about the nature and context of contact: what 'counts' as contact, where it occurs and who (or what) it occurs between. For example, Bradford et al. (2009: 38, emphasis added) found 'that *any* type of contact, self- or police-initiated, satisfactory or unsatisfactory, is associated with significantly worse views of effectiveness', and go on to note that 'Tyler and others argue that fairness, decency and attentiveness are things which can be shown on almost any occasion by police officers or staff through their actions (or inactions), demeanour and other behaviour.' (Bradford et al., 2009: 42). But this assumes that human officers are representing police in encounters with other humans, in very human ways; an assumption that now only applies in certain circumstances. It is now possible to identify encounters that are human only on one 'side', while a definition of what 'police' is/looks like/feels like ceases to be predicated on an assumption of the human police officer.

Interpersonal contact

We also know that data 'support the idea that it is personal treatment which is most important to people in their dealings with the police' (Bradford, 2010: 10), but we do not know that we can remove the personal part and assume that treatment remains salient. Without explicitly acknowledging technologically mediated encounters, Mazerolle et al. (2013: 264, emphasis added) are optimistic about transferring procedural justice principles into various types of police intervention, noting that 'it is the procedurally just *features* of the training, directive or organizational innovation that foster legitimacy-enhancing dialogue [therefore] *any* type of police intervention could be tailored to use dialogue that facilitates legitimacy'. Their idea of a policing intervention, however, is clearly 'grounded' in the real, rather than virtual world, being 'routine policing, traffic stops, investigations, warrant execution, problem-oriented policing, conferences, school-based programmes [and] crackdowns' (Mazerolle et al., 2013: 271).

It is by no means clear, therefore, that what we know about procedural justice and the importance of contact with police still applies under a 'channel shift' agenda. We know from the procedural justice literature that 'neutral', 'consistent' and 'impartial' treatment is important to people and, arguably, technology is good at facilitating such experiences. But other core antecedents of procedural justice such as politeness, respect and voice may lend themselves more obviously to the interpersonal encounters that technological mediation may reduce, as in the case of the SOH interface.

Terpstra et al. (2019: 15) suggest that '[r]elations with citizens and communities may become less personal and direct and more dependent on abstract police information systems … [and] One may wonder what consequences the increasing abstractness of the police have from the perspective of citizens'. Under such conditions, does T Tyler's (2003: 288) assertion that '[l]aw is about the regulation of people's conduct, and its success rests on the ability of particular legal authorities effectively to shape people's behaviour during personal encounters between legal authorities and members of the public' still hold? And this is not just a question of whether technology is used 'fairly', but of working out what effects technology has on perceptions of fairness, legitimacy and, in turn, compliance. Moreover, as Norman (1993) observed, technology does not just enable (as much central policy would imply), it influences, and it shapes.

The architecture of contact: Visibility and accessibility

When Millie (2012: 1098) asked 'what is a police station?' he captured something of our concerns here. Is the station simply somewhere information can be exchanged, or does its physical presence, and that of the officers assumed to inhabit it, offer more than that? These questions are critical to understanding whether an online reporting portal offers the same experience, conveys the same meanings, and (in turn) is likely to create the same outcomes. Technologically mediated contact may increase accessibility for many (arguably, in some cases, providing a genuinely 24/7 service). Sindall and Sturgis (2013) note that visibility is linked to confidence in the police but use an idea of visibility firmly rooted in a model of physical co-presence. Any exploration of the association between visibility and confidence now, however, must consider ways of being visible without being co-present, for example via websites. But to the extent that websites are seen as substitutes for physical policing, and that their arrival coincides with the withdrawal of physical manifestations of policing (for example, station closures), increased

use of such technology may be viewed as indicating the retreat of the police from public or community life (McLaughlin, 2008). Can virtual architectures replace physical ones,[2] or do the latter retain valence despite the widespread take up of new technologies?

In an article signalling the importance of the quality of police contact, Bradford (2010: 5) notes that 'reassurance and community-based policies have centred the idea that trust and confidence can be restored by increasing police visibility and accessibility, creating a more "customer-focused" police force'. There are some apparent parallels here with the agenda of the NPCC sketched out above, where the need for visibility and accessibility drives moves to make the police more readily available online, and more digitally connected generally. It is not clear, however, that visibility, accessibility and familiarity can be easily or simply moved 'online' or augmented digitally. For instance, Aston et al. (2021) found that accessibility, communication, personal contact and relationships, particularly via face-to-face community engagement, were important in facilitating information-sharing with police online. Thus, a key challenge for policing in the years to come is likely to be achieving visibility, accessibility, familiarity and consent when operating simultaneously in physical and virtual spaces.

On the other hand, although the concept of police visibility is routinely associated with encounters with officers, in part because it indicates presence, accessibility and effectiveness (from lay perspectives at least; Hawdon et al., 2003), recent developments may lead us to question whether physical co-presence is the only way to make policing visible. By separating the two, we are also forced to consider whether visibility is reassuring per se, or whether 'being reassured' is rooted in accessibility and perhaps even familiarity. Is it the mere evidence that police exist that is reassuring, or do we need to believe that, in an emergency, officers would be near enough to act (and would be willing to do so)? From the lay perspective, is access to the police that cannot generate immediate action (should this be needed) in any sense reassuring? If the underlying or implicit potential for the use of force is central to the reassurance offered by policing, it might seem doubtful that a 'remote' police service would be able to help.[3] Nonetheless, Sindall and Sturgis (2013: 46–47) suggest that 'there are good theoretical reasons to believe that a less visible police service will lead to declining public confidence, because confidence emanates from feelings that the police are watching over communities and acting as a symbolic figurehead of the community'. It may therefore be of little surprise that a recent study identified relatively low levels of confidence in police in rural areas, and linked this explicitly to the inaccessibility of officers to many rural residents (National Rural Crime Network, 2018).

Much of the literature about the relationship between visibility, accessibility, trust and legitimacy is thus based on assumptions about policing that no longer seem to hold in the context of SOH. We need to separate the qualities associated with co-presence from those associated with visibility, accessibility and familiarity to understand if and how police legitimacy will be altered by increased technological mediation and reduced in-person police–public encounters.

Interacting with technology

There is a significant body of research looking at human/machine interactions that can be interrogated for its relevance to policing, in general, and the idea of procedural justice, in particular. Even within this literature there are explicit concerns that '[g]iven the dearth of academic research on the implications of digital technology for procedural justice theory, it is difficult to analyse fully what we can expect in this domain' (Rabinovich-Einy and Katsh, 2014: 35).

Consider, for example, research on the ways people think about and interact with algorithmic decision-making tools and artificial intelligence (AI). On the one hand, evidence suggests that algorithmic decision-making is perceived as having less agency and emotional capabilities than humans, as being more rational and less intentional or emotional (Lee, 2018), and more accurate than humans (Kleinberg et al., 2018). Within healthcare, for instance, it is thought that algorithmic tools perform with expert-level accuracy, deliver cost-effective healthcare, and often outperform human actors (Longoni et al., 2019). It is easy to imagine that this superior accuracy would be preferable to many, with people willing to follow the advice of the data-driven technology over human experience and intuition, which may be fallible, biased and misjudged (McGuire, 2021).

Conversely, studies have also found that people may see algorithmic decisions as less fair and appropriate than police officer decisions (Hobson et al., 2021). Dietvorst et al. (2015) use the phrase 'algorithmic aversion' to describe a complex set of reactions to AI, which Burton et al. (2018) argue include: false expectations that affect responses to algorithmic decision-making (for example, the idea that error is systematic, 'baked in' and irreparable); concerns about decision control and a general sense that the decision-maker cannot be considered trustworthy; and an emphasis on the need for human decision-making in contexts marked by uncertainty. In sum, although it might be relatively easy for algorithmic decision-makers to demonstrate some aspects of procedural justice, such as neutrality, it may be much harder to them to display others, such as voice (that is, decision control).

Moving away from AI, research by Nass and Moon (2000: 81) suggests that the wider set of human interactions with digital systems must be considered in their social context. They suggest that 'individuals mindlessly apply social rules and expectations to computers' and that they read-off, as well as display, overlearned social behaviours, such as politeness and reciprocity, to computers. Although it is true that 'a computer is unaware of a user's emotions and it never expresses emotions of its own' (Nass and Moon, 2000: 82), this does not mean that emotions are irrelevant, particularly in a policing context in which the user is probably in need of help and the machine (via which the SOH is accessed, in our case) acts as an intermediary between a (potentially) emotional user and a symbolically loaded institution.

Nass and Moon (2000) also suggest that users think 'expert' systems are more credible than generalist ones, and attribute 'personalities' to computers. Indeed, when the stimulus is purportedly from an authority figure, Langer suggests 'premature cognitive commitment' is produced and 'information is accepted uncritically, without attention to other aspects of the situation.' (Langer, 1992 cited in Nass and Moon, 2000: 90). Whether this applies when the authority figure is not respected (perhaps when the user has negative prior experience of the authority) is, seemingly, an unknown. However, implied gender, expertise, politeness and ethnicity all proved to be relevant to the user experience, confirming that social cues and socially learned expectations are relevant even when an interface is technically neutral. This suggests that prior experiences of interpersonal policing may well impact on experiences of technologically mediated policing in that users do not leave all their social learning behind when they find themselves in front of a screen.

Relatedly, Spain and Madhavan (2009) found that people's responses to instructions provided by a machine are shaped by their trust in the system, and that its politeness and perceived pedigree impacts upon willingness both to take advice and to use the system in the first place. The various approaches to trust have been characterised as analytic, analogic and affective. Of most potential relevance to the discussion here are the analogic and affective approaches: 'Analogical methods for trust development involve linking levels of trust to characteristics of an agent or environmental context …. Basing trust on consumer reviews, gossip, or hearsay information reflects an analogical trust tuning method' (Spain and Madhavan, 2009: 339). As such, we might expect individuals to draw on prior direct, and vicarious, traditional contact experiences in forming their judgement of technologically mediated contacts. We might, therefore, expect that groups with historically difficult relationships with the police may bring those concerns with them to access portals like the SOH, even when the human agent has been removed from, or de-prioritised in, the encounter. Inanimate objects, even those as mundane as SOH, can still get their users animated.

Research on online dispute resolution may also offer some lessons for SOH. Here, users are engaged in some form of disagreement or conflict; the process involves digital, online or computerised elements; and a resolution is sought. Rabinovich-Einy and Katsh (2014: 6) note that in this context, too, 'where technology has been embraced, it has most often been viewed as a convenience or efficiency enhancer', but this literature shows both the potential and risks of introducing digital technologies as a 'fourth party'.[4] The introduction of technology is disruptive to a range of 'boundaries' (physical, conceptual, psychological, professional),[5] which, given that institutional legitimacy is tied to boundaries constructed and shaped outside the digital context, may also disrupt legitimation processes.

The need to future-proof procedural justice theory

The procedural justice literature tells us, emphatically, how important process is, but it is a literature that has not yet evolved sufficiently to guide us into a new technologically mediated policing world. And although we might look to the many studies of human–machine interaction to learn about how people experience technological mediation, they often relate to contexts that do not carry the same symbolic load as policing.

The introduction of technology into policing has often been presented in positive terms, primarily because of various non-discriminatory potentialities. For example, it has been suggested that this 'is the first time in human history that we have the opportunity to experience forms of control that do not take into account any category of social division. Age, sex, race, beauty and attire are irrelevant and, what is equally important, guaranteed to be so' (Lianos and Douglas, 2000: 108). Here, increasing automation and technological mediation facilitate the consistency, neutrality and impartiality components of procedural justice. The antecedents of politeness, respect, opportunities for voice and unbiased motivation are, however, missing from this optimistic presentation and, it might be argued, these are the antecedents that we might presume to be attributes of human encounters (and which the literature above suggests are still relevant). Perhaps people need reassurances that humans are acting with consistency, neutrality and impartiality because they know that people are capable of bias and discrimination? How important might these properties be, therefore, once they are guaranteed? Might they be less important than the 'human' antecedents? And are we in danger of 'designing-out' the 'human' antecedents because we do not know how significant they are?

'Human' antecedents and technologically mediated encounters

With so little specific research on this topic, we are left with the option of exploring each of what we term the 'human' characteristics in turn via research in related areas, before speculating on their fate in a policing world increasingly mediated by technology.

Rabinovich-Einy and Katsh's online dispute resolution research gives us encouragement for this endeavour, because the few experiments that attempted to measure procedural justice-related factors 'found that disputants continue to expect dispute resolution processes to fulfil criteria associated with procedural justice – to allow for voice, to treat them with respect, to be neutral' (Rabinovich-Einy and Katsh, 2014: 34). These are not the entirety of procedural justice antecedents, but interestingly they do span both those more likely to be considered technologically enabled (neutrality) and those perhaps more associated with human capabilities (voice, respect). Furthermore, (Rabinovich-Einy and Katsh (2014: 16) found that these factors were significant in determining fairness: '(1) whether they were given an opportunity to "tell their story" ("opportunity for voice"), (2) whether the third party considered their views, (3) whether the third party "treated them in an even-handed and dignified manner" and (4) the "impartiality of the third party"'. However, Rabinovich-Einy and Katsh (2014: 23) also suggest that '[d]evelopments in the future can be expected to provide screens with finer resolution, thus facilitating the idea that face-to-face communication can occur at a distance'. This rather relegates the importance of physical co-presence – promoting the visual appearance of another human as being somehow the determining factor. If this is the case then, it does not matter too much what the person does, so long as they do it in high definition. It may be that there is more to co-presence than simply being face-to-face, or that (contradictorily) a face is not required if the interaction nonetheless feels interpersonal. The following discussion therefore unpicks those implicitly human antecedents of procedural justice in turn and speculates on the relevance of the discussion for policing generally, and developments like the SOH specifically.

Voice. 'Voice' is arguably the central component of procedural justice. Early studies concentrated primarily on a concept of decision control – feeling that one has input into decisions that affect oneself – often referred to as voice (Lind et al., 1990; TR Tyler, 1987), and positioned voice as the key predictor of overall perceptions of process fairness (Lind et al.,1997). The readiness of police to listen – and demonstrate that they are listening – to citizens may be central to the latter's perception that the former behaves in a procedurally fair manner. However, Terpstra et al. (2019: 12) highlight what might be lost with a shift towards the collection of 'system information' gathered via 'frames and categories of computer systems' that centre what police wishes to know, not what the public wishes to share. To the extent that such developments inhibit people from telling 'their side of the story', police–community relations may suffer.

Undoubtedly, the introduction of digital data capture will 'informate' (Zuboff, 2001) encounters and translate qualitative experiences into compartmentalised information that fits the systems' needs. Although processes may turn complex situations into consistent, neutral representations of reality that are amenable to policing needs, auditable and accountable, they do not 'take into account that many citizens have the emotional need to tell their story in-person and not by internet or teleservice system' (Terpstra et al., 2019: 9). Victims and witnesses, for example, may wish to share detail relating to impact and experience that is not 'useful' from a policing perspective, but which they consider it 'useful' or 'important' to share. It is not clear that the importance of 'voice' will be sufficiently acknowledged in increasingly technologically mediated encounters such as reporting via SOH, which so often categorises input to drop-down menus and text-based communication.

We are reminded here of Rabinovich-Einy and Katsh's (2014) idea of processes that do, and do not, 'require' face-to-face encounters, and that the definition of what may be deemed a necessary element of an encounter is likely to differ depending on the role of the participant. If processes are designed by only one 'side', they are likely to reflect the 'requirements' of that side; and this seems more of a danger when police–public interaction proceeds using forms, forums and feedback mechanisms designed by and for the police than if that interaction proceeds on the basis of two people talking to each other. Unless issues such as these are recognised and explored, we may see a relative (even if unintentional) prioritisation of demand-side needs for specific information over supply side needs for less-focused and possibly idiosyncratic communication. Is the antecedent of voice, perhaps, part of the police 'craft' that is peculiarly and exclusively human?

Politeness and respect. Whether or not technology can be polite, or if this is an idiosyncratically human capability, is a particularly significant question given that we know that users still expect politeness when interacting with a computer, and rate their experience based on such 'feedback etiquette' (Spain and Madhavan, 2009). Spain and Madhavan (2009: 342) created three types of feedback that their computers would issue – polite, neutral and rude – and found that 'participants perceived the polite system as being more reliable than the neutral system and the rude system, even though each system was equally reliable'.

How this plays out in the context of online reporting to police, or online checking of the progress of a case, is yet to be explored. As Skogan (2006: 104) notes, in traditional contexts '[p]olice are judged by what physicians might call their "bedside manner". Factors like how willing they are to listen to people's stories and show concern for their plight are very important, as are their politeness, helpfulness and fairness'. This therefore raises the question: can a message relayed via a digital system, such as SOH, convey the same emotional meaning of politeness that can be achieved by a police officer?

The procedural justice antecedent of politeness can be difficult to disentangle from the antecedent of respect. The latter seems more closely connected to being taken seriously, being paid attention to and a sense that the police understand those they interact with. Bradford et al. (2009: 39) note that 'being taken seriously by the police [is] by far the most important factor' in determining how positively the police were viewed, and it is therefore crucial that we understand to what extent 'being taken seriously' is affected by technological mediation. Indeed, as Watson (2019) argues respect is an elusive value and criminal justice institutions rarely address how respect is operationalised. Does an online reporting system reassure its contributors that someone is paying attention, and the contact is valued?

Bowling and Iyer (2019: 152) state that '[m]anual processes have the virtue of human judgment and adaptability, and yield appropriate emotional responses such as attentiveness, sympathy and kindness'. In this understanding we can see that the ability to amend an approach to the context that is presented is going to be key to communicating respect for the individuals involved. As Wells (2007: 614) has suggested, we must avoid 'procedures that deny citizen input, do not afford dignified and respectful treatment'. Do automated drop-down menus, as can be found on the SOH, respect the myriad of ways in which a victim can understand and represent their experience? The restrictive parameters imposed by technology may well be shifting the focus to 'what you do' and away from 'how you do it' – the opposite of what the procedural justice literature endorses.

However, Bradford et al. note that ease of contact is also significant in determinations of police fairness, and that this can be related to the messages a force sends about its respect for its citizens. They suggest that 'a police force which was hard to contact would be sending a very definite message to those it policed about their relative worth or position' (Bradford et al., 2009: 39). Although the SOH may prevent such a message by increasing accessibility, we should not assume that a quick-but-rude answer will be deemed acceptable.

Consistency and neutrality. Technological mediation of the type under discussion here seems well suited to demonstrating consistency and neutrality (Joh, 2007; Lianos and Douglas, 2000; Tudor-Owen, 2019), with standardised forms, pre-programmed options and timed responses, all elements of the SOH. However, we do not know, at present, how the apparently 'human-compatible' elements may relate to the 'technologically compatible' elements and whether they endure in recognisable forms in the absence of each other. Indications from traffic policing, where automation is probably most advanced, are that some recipients of police attention note the withdrawal of the human from the enforcement process, and conceptualise that withdrawal as leading to 'unfairness' and 'injustice', seeing the increased consistency, neutrality and impartiality negatively in terms of a reduction in discretion (Wells, 2008). However, for some groups, the guaranteed neutrality of the speed camera (for example) may be seen as a positive and we may find that it is one of the few types of detection that does not show bias (Ralph et al., 2022). We cannot even assume, therefore, that the positive predictions around such things as neutrality and consistency will translate readily and simply into technologically mediated contexts. They, too, may be transformed by that shift.

There are still potential issues (explored in part above) around who gets to put their imprint on the system that then treats everyone the same and does so for the right reasons. Which 'system designers' with what 'cognitive biases' and guided by what 'heuristics' get to shape the form of public access to the first stage of securing justice, redress, or simply acquiring information that are then deployed with guaranteed consistency (Rabinovich-Einy and Katsh, 2014)?

Trust. Perceptions of the trustworthiness of authorities refer to a belief that they care about individuals, and have the latter's best interests in mind (Lind and Tyler, 1988). Digitally mediated contact may be experienced differentially by different service users and in this context, trust is interesting because the extent to which an individual trusts an encounter that is mediated by technology is likely to depend on their own attitudes to technology, as much as it does on their attitudes to the authority they are encountering. Referencing Lee and See (2004) cited in Spain and Madhavan (2009: 339) observe that '[a]ffective methods for trust development focus on emotional responses to automation rather than logic… The affective method also acts as a barrier, in that if the user does not like automation, he or she may not use it enough to develop appropriate trust'. As such, an understanding of technological mediation and its effect on legitimacy must consider that different individuals will have different pre-existing attitudes towards technology, separate to their attitude towards or need to engage with the police. Might distrust of technology then influence levels of trust in the

agency encouraging engagement via technology? Alternatively, might some groups be encouraged to engage more readily given their likely familiarity with technology?

As above, we may also ask who designs the forms, the menus, the logos and the badges that communicate what the technology is trying to achieve, and how can we make sure that these are informed by what we know about how people interact with and feel about technology, and indeed policing? For instance, Kim and Moon (1998: 340) found that 'trust in on-line banking systems was influenced by surface level features of the website such as coloring and text that produced positive affect, rather than its actual banking capability'. In a different study, Parasuraman and Miller (2004) 'found that automation etiquette influenced automation trust. Of particular significance was the finding that good etiquette mitigated the effects of poor reliability on trust' (cited in Spain and Madhavan, 2009: 340). Millie (2012), again, argues that police station architecture gives off signs and conveys messages, so why would we not think about the structure of a website as having the potential for 'architecture as reassurance' or, indeed, the opposite?

The same technology, furthermore, will not be experienced or viewed in the same way by all, and older service users, for example, may 'read-off' different signals from technologically mediated encounters than younger people (who may be more used to such situations), or may disassociate and distance themselves from encounters that can only be conducted in that way (SOCITM, 2018). As Rabinovich-Einy and Katsh (2014: 64–65) have also observed, '[a]lready, social attitudes towards privacy are changing dramatically with the younger generation willing to disclose an abundance of personal, sensitive information online' and hence less likely to be discouraged by the prospect of reporting victimisation (for example) via portals like the SOH and, indeed, social media.

Spain and Madhavan (2009: 339) also found that prior experience (or at least expectation) impacted on the quality of interactions. They cite research that 'compared the effects of expected system performance on trust and dependence and found that participants who expected the system to perform reliably trusted the system more than participants who expected the system to perform poorly'. If we were to explore this in the context of policing and technological mediation, we may find that both levels of trust in technology and levels of trust in the institution are relevant – that it, is important to understand trust in 'systems' as well as trust in 'The System'.

For some, however, the introduction of technology into an encounter may be seen as offering protection from unfair police action in that the technology can be trusted more than the human agent. If we take the role of technology even further and replace the human representative entirely then it may be that a more remote, 'abstract' system such as SOH reduces the stigma associated with engagement with the police and leads to more legitimacy, particularly for those encountering the system as offenders. We need, therefore, not just 'greater awareness of the identity-relevant aspects of officer behaviour' (Spain and Madhavan, 2009: 544) but greater awareness of the imputed 'behaviour' that may be read-off from all forms of contact if we are indeed to understand how these changes may manifest in future interactions.

Methodological reflections

Given the emerging nature of research on procedural justice encounters in technologically mediated contexts, it is important to reflect on the methodological approaches upon which this research could draw. Given the position of disruptive systems such as SOH, a tool designed by software developers for the police to be used by the public, an interdisciplinary approach is required as the basis for the future avenues of research that we have recommended here. Beyond criminology, skill-sets and knowledge related to digitally disruptive contact systems and algorithmic decision-making could be drawn from computer scientists and human factors psychologists (e.g. Spain and Madhavan, 2009), communication scholars (e.g. Nass and Moon, 2000; Xu et al., 2022) and legal scholars of online dispute resolution (e.g. Rabinovich-Einy and Katsh, 2014). As contact systems like SOH become increasingly automated, research should also include scholars of machine learning and AI in user interfaces (Bader and Kaiser, 2019) and criminology scholars of automation in policing (McGuire, 2021).

There is also an opportunity here to collect data in collaborative ways, tailored to the different actors involved, the public user's experience, policing requirements and software design. With regards to public use, it would be important to draw on User eXperience (UX) testing, enabling UX designers to collect data from the public, about their experiences, affording workable and acceptable recommendations for future contact systems. Contextual inquiry methods would seem particularly appropriate for understanding experiences and reactions to technologically mediated contact encounters, alongside approaches that explore differences within and among different demographics and user types that make up the 'public' end user. Online survey experiments (Hobson et al., 2021), combined with follow-up interviews, could provide another way explore the challenges and opportunities of public experience of digital systems. Fundamentally, however, it is also crucial to engage with the service designers, strategists and leaders within policing who are currently driving delivery,

and within the technology companies and designers who provide the infrastructures underpinning technologically mediated contacts.

Conclusion

Much of the extant literature on interaction and contact that has heavily influenced policing and policing scholarship appears ill-prepared for what looks to be a fundamental procedural shift, given that its foundations lie in as-yet-unexplored expectations about the developing nature of contact and taken-for-granted assumptions about the co-presence of two humans in police–public encounters in the 21st century. Although technologically mediated contacts may still offer procedural justice, we do not know that this is the case and we risk undermining the legitimacy with which policing is perceived if we proceed to change the nature of contact – via mechanisms like online reporting, which we have focused on here – without understanding how it changes the contact experience. For example, Bradford et al. (2009) found contact (as a form of visibility and accessibility) crucial in influencing public attitudes towards the police, but did not dissect what contact means. Over ten years on from this finding, it is becoming increasingly apparent that a model of contact predicated on physical co-presence is outdated in that it will no longer characterise many people's experience of the police.

Although it has been shown that there is a 'need to consult those affected by the process being designed' (Rabinovich-Einy and Katsh, 2014: 18) when technology begins to mediate an experience, there is little evidence that, centrally or locally, policing has taken this on board. Indeed, while '[p]rofessionals have often been slow to embrace new technologies … where they have mastered such technologies, they have tended to overlook their disruptive impact, instead embracing their short-term promise for enhanced efficiency' (Rabinovich-Einy and Katsh, 2014: 35).

In an effort to be more visible and accessible with depleted resources through initiatives such as SOH we risk entering a policing world that is focused on what technology can do for the police, not what the public needs it to do. Rather than a simple process of 'channel shift' (something that implies a simple move – a flick of a switch – from one frequency to another), we need to accept that current developments are more than this – that they may in fact be transforming relationships rather than simply facilitating existing ones.

To conclude, Bradford et al. (2009: 42) argue that '[t]he bottom line in terms of evidence for improvement is that "contact matters", and that such contact no matter how slight can leave an impression'. It is time that, through empirical research, we update our conceptual understanding of what 'contact' can mean, so that we can strengthen our theoretical understanding and proceed with confidence with a theoretical framework and policy recommendations that are fit for a technologically mediated present and future.

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Notes

1. The SOH is a programme driven by the NPCC Digital Public Contact portfolio and currently in operation in nearly half of UK forces. Other forces have similar, stand-alone platforms which have similar aims and functionality.
2. Moreover, as Rabinovich-Einy and Katsh (2014: 12) ague in relation to court rooms, that '[t]he differing qualities of the particular physical space used, along with the manner in which information is communicated and processed, shape and reinforce different values'. If 'the physical' is removed, does this shift, or even fundamentally alter, the values encoded in information streams involving police and public?
3. Similar developments are on the horizon with the advent of armed drone technologies and, even, robot dog units (McGuire, 2021), which possess the capacity to use force in circumstances that were previously the domain of human police officers.
4. The other three parties being the defendant, the accuser and the party being called on to resolve the dispute.
5. Albeit in a figurative rather than literal sense. Participation from the public is still necessary, in that they will be needed to report incidents, to act as witnesses, to complete paperwork, etc., and if they stop 'turning up' they withdraw their consent.

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