Article

Procedural Justice Concerns and Technologically Mediated Interactions with Legal Authorities

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Abstract

The use of surveillance technologies by legal authorities has intensified in recent years. As new data collection technologies expand into law enforcement spaces previously dominated by interpersonal interactions, questions emerge about whether the public will evaluate interpersonal and technologically mediated interactions with legal authorities in the same ways. In an analysis guided by procedural justice theory, we examine whether and how legal authorities' use of decision-making technology affects public evaluations of an authority-subordinate interaction and its outcome in the context of airport border crossings. Using an experimental vignette design ($N = 278$), we varied whether an encounter between a traveller and border security "agent" that produced a secondary search was described as interpersonal (conducted by a human agent) or technologically mediated (conducted by a machine agent). We also varied the traveller's group membership relative to the nation-state, describing the traveller as either born in the country in question and a member of the nation's most common racial group (in-group) or not born in the country and a racial minority (out-group). Both encounter type and group membership independently affected perceptions of the interaction (procedural justice judgements) and its outcome (distributive justice judgments). Technologically mediated encounters improved perceptions of procedural and distributive justice. Further, procedural justice judgments mediated the relationship between encounter type and distributive justice, demonstrating how perceptions of interactions influence perceptions of the outcomes of those interactions. Out-group members were evaluated as having worse experiences across all measures. The findings underscore the importance of extending tests of procedural justice theory beyond interpersonal interactions to technologically mediated interactions.

Introduction

Technologically mediated data collection and analysis is an increasingly common tactic of legal authorities. In many cases, technologies (e.g., security cameras, body-worn cameras) are being used by legal authorities simply to document information and encounters, but data collection technologies are also being leveraged to render decisions through artificial intelligence (e.g., automating the processes of licence plate or biometric recognition). Despite public concerns with how these new processes compromise privacy and safety (American Civil Liberties Union 2013; Lum et al. 2010; Merola and Lum 2012), to date there is little research examining how the public—the subjects of such surveillance—react to the increasingly technologically mediated nature of encounters with legal authorities. In addition, while the scrutiny of legal authorities has often focused on subsets of the population such as the poor, less educated, and racial/ethnic minorities, exposure to surveillance technologies is increasingly a common experience for everyone. Airport border crossings, which are quickly adopting decision-rendering technologies such as automated passport/declaration card readers and biometric identification processes, serve as a prime example. In short, despite the vast and growing extent to which legal authorities interact with the public via technologically mediated surveillance, empirical understandings of the causal relationships at work in public evaluations of surveillance technologies in such contexts remain limited. We reflect on the value of procedural justice

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theory (specifically, the traditional procedural justice antecedents of respect, neutrality, trust, and voice) to hypothesize and test effects of surveillance technologies on public evaluations of interactions with legal authorities.

We present results from an experimental laboratory study using a vignette methodology to explore the impact of a decision-rendering technology on public evaluations of an interaction with a legal authority in the context of airport border crossings. Though not frequently employed in the surveillance studies literature, experimental methods offer a means to develop understandings of causal relationships, allowing for variables influencing public evaluations of interactions with legal authorities, such as technological mediation, to be identified. Specifically, we explore whether and how the introduction of an automated kiosk assessing traveller documents affects public evaluations of the process and outcomes of passing through border security at an airport. Further, we employ a test of procedural justice theory, assessing if procedural justice judgments mediate the relationship between the style of the authority's interaction (i.e., interpersonal or technologically mediated) and perceptions of distributive justice. Finally, we explore whether use of technology interacts with the surveillance target's group membership relative to the legal authority (i.e., in-group or out-group), to affect public evaluations of the encounter and its outcome. Our contribution empirically explores whether and how traditional conceptions of procedural justice apply to technologically mediated interactions between legal authorities and the public. The work draws attention to the importance of technology as an emerging and critical area of study for researchers interested in the relationships that exist between the public and legal authorities. In doing so, we also highlight the potential utility of extending procedural justice theory beyond the interpersonal realm, in which it is largely situated, to technologically mediated encounters with legal authorities.

Literature Review

Exploring Public Perceptions of Surveillance through the Lens of Procedural Justice

Interactions with legal authorities (e.g., police, probation officers, corrections officers, border officers) have historically involved interpersonal exchanges. However, technology is increasingly used to gather, analyze, and scrutinize data about persons in a variety of contexts. The reliance on technology to gather data can facilitate “mass” surveillance environments, where all persons who pass through a space (physical or virtual) are subject to the same (initial) data collection and scrutiny. These changes to the nature of public interactions with legal authorities raise questions about how the public perceives these encounters. Law enforcement is, of course, intended to be *for* the public. As such, it is important to critically interrogate the changing nature of public interactions with various types of legal authorities and develop an understanding of when and why the introduction of technology affects public perceptions of such encounters and their outcomes. The procedural justice literature offers a framework for such an enquiry.

Procedural justice research focuses on subordinates' (generally characterized as decision-recipients) perceptions of the processes used to reach outcomes. Procedural justice theory has been widely applied in legal contexts including evaluations of interactions with police (Saulnier et al. 2020; Sunshine and Tyler 2003), judges (Tyler 2007; Wales, Hiday, and Ray 2018), correctional guards (Beijersbergen et al. 2015; Resig and Mesko 2009), and border guards (Brouwer, van der Woude, and van der Leun 2018; Hasisi and Weisburd 2011; Jonathan-Zamir, Hasisi, and Margalioth 2016) to understand how public perceptions of the *application* of law are separate from perceptions of the *outcomes* of law (Mazerolle et al. 2013; Saulnier and Sivasubramaniam 2018; Tyler 1988). Across varied forms of legal authorities, a consistent finding from a wealth of literature exploring procedural justice effects has emerged: that subordinates' perceptions of procedural treatment influence perceptions of outcomes as well as of the authorities administering those procedures (Lind and Tyler 1988; Thibaut and Walker 1975; Tyler 2017). Research has demonstrated that the way in which procedures are administered impacts public attitudes (e.g., legitimacy) and behaviours (e.g., compliance) towards legal authorities during the interaction as well as more generally (Mazerolle et al. 2013; Sunshine and Tyler 2003; Tyler and Wakslak 2004).

There are two primary theoretical motivations driving subordinates' interest in procedures: instrumental concerns and relational concerns. Instrumental concerns push subordinates to focus on procedures out of a belief that procedural control influences outcomes produced; in other words, people care about decision-making procedures out of the desire to influence the production of favourable outcomes for oneself (Thibaut and Walker 1975, 1978). In contrast, relational concerns drive subordinates to focus on procedures out of a belief that treatment is indicative of one's status as a valued person; in other words, people care about decision-making procedures because treatment communicates whether we are perceived as on par with or beneath the social standing of the authority administering the procedure and, in some cases, the broader social group that authority represents (Bradford 2014; Bradford, Murphy, and Jackson 2014; Lind and Tyler 1988). A substantial body of work demonstrates that there are four key relational antecedents that influence perceptions of procedural justice: voice, neutrality, trustworthiness, and respect (Lind, Kanfer, and Earley 1990; Mazerolle et al. 2013; Tyler and Degoey 1995). In the context of law enforcement, research has consistently demonstrated that relational concerns are more influential in the formation of procedural justice evaluations than instrumental concerns (Hasisi and Weisburd 2011; Tyler 2016; Tyler, Jackson, and Mentovich 2015). However, this procedural justice literature is largely situated in the context of interpersonal interactions, with limited work exploring whether procedural justice concerns operate similarly in technologically mediated encounters (Joh 2007; Wells 2008; Wells and Willis 2012). The need to understand public appraisals of technologically mediated encounters is important given that exposure to such forms of data collection by legal authorities is increasingly common (Cope 2004; Ratcliffe 2014; Sanders and Sheptycki 2017). Further, public exposure to surveillance has been demonstrated to affect relations between authorities and subordinates by communicating to subordinates their status as objects of authority suspicion (Tyler, Jackson, and Mentovich 2015). Procedural justice theory (and relational concerns in particular) may provide a useful framework for understanding public perceptions of, and reactions to, the use of surveillance technologies by legal authorities in varied contexts.

Technological Mediation

Legal authorities are increasingly adopting a pre-emptive focus reliant on digital data collection and analysis. This transition can be attributed to a number of factors, including: technology transfers between military and domestic authorities (Kraska 2007); demands for the improved efficiency, effectiveness, and accountability of legal authorities in all manner of contexts, but especially policing (Chan 2001; Sanders and Hannem 2012) and border (national) security (Lyon 2006; Mueller 2006); and, the pressing need for legal authorities to warehouse information necessary for risk management (Ericson and Haggerty 1997; Murakami Wood et al. 2006). Ultimately, legal authorities are becoming increasingly reliant on technology in the administration of justice. Instead of direct, interpersonal interactions, technology is increasingly being used to engage in data collection and assessment.

The procedural justice literature suggests that this new style of law enforcement may have consequences for legal authorities. However, in general, little is known about "factors that may work alongside procedural justice in promoting (or impeding) its expected desirable outcomes" (Jonathan-Zamir, Hasisi, and Margalioth 2016: 613), and, more specifically, the extent to which technology "undermines, preserves, or enhances" relations between the public and legal authorities is limited (Maguire 2014: 85). While relational concerns strongly influence evaluations of legal authorities in interpersonal contexts, the functioning of relational concerns in an era of technologically mediated law enforcement remains largely unknown. The experience of surveillance is shaped, in part, by the form that surveillance takes (Ball and Margulis 2011), and technological mediation is an important factor to consider when assessing public reactions to surveillance administered for the purpose of law enforcement. It is important to undertake contextually sensitive assessments of whether and why public evaluations of technologically mediated interactions with legal authorities vary. In what contexts do subordinates derive relational information from technologically mediated interactions with legal authorities? Further, why do particular technologically mediated encounters provide information that satisfies or fails to satisfy subordinates' relational concerns? Finally, do relational procedural justice concerns influence outcome evaluations of technologically mediated interactions in the manner expected in interpersonal interactions? The limited body of work relevant to answering these questions points to context as a key consideration.

Hasisi and Weisburd (2011) suggest that technologically mediated (as opposed to interpersonal) interactions that make the process of authority decision-making more transparent and less subject to personal bias may enhance perceptions of procedural justice in the context of airport security checks. (It is worth noting that many scholars have critiqued the neutrality of technology [Andrejevic 2019; Norris, Moran and Armstrong 1998; Winner 1980], though lay interpretations arguably tend to associate technologically rendered decisions with neutrality.) However, others have drawn attention to challenges associated with adequately conveying attention to procedural justice concerns when interactions are technologically mediated. For example, Merola, Lum, and Murphy (2019) found that participants exposed to automated licence plate recognition in stimulus materials reported lower levels of trust in police compared to a control group. Similarly, other studies suggest that, in the context of automatic speed limit enforcement, “techno-fixes” do not address relational concerns (Wells 2008). Wells (2008) argues that, while the automated administration of speeding tickets flaunts the allure of neutrality and impartiality, the extent to which such encounters leave subordinates satisfied with regards to concerns of respect or voice is limited. Some research has therefore drawn attention to ways in which technologically mediated encounters with law enforcement may violate relational expectations by communicating undesirable (suspect or criminal) identities while providing none of the positive identity affirming information associated with procedurally just interpersonal treatment.

Separate from *being affected* by exposure to surveillance, identity may also *affect* perceptions of surveillance enacted by legal authorities. Specifically, factors unique to data targets, such as pre-existing characterizations of in- or out-group membership relative to authorities, may interact with authorities’ use of technology to affect public evaluations of the process and outcomes of authority-subordinate interactions.

Group Membership

Relational explanations of procedural justice effects are founded in the assumption that group membership is highly salient to people. Group membership refers to how people identify with others—as relative in- or out-group members (Lind and Tyler 1988; Tyler 1989; Tyler and Lind 1992). Power relations are embedded in interpersonal dynamics between and within groups, and these relations are defined, in part, through attention to relational concerns during interactions (Bradford 2014; Bradford, Murphy, and Jackson 2014; Tyler and Lind 1992). The traditional reasoning underlying relational models of procedural justice argues that attention to relational concerns (i.e., respect, neutrality, trust, and voice) by an authority during an interaction communicates to a subordinate their group membership status relative to the authority and the social group that authority represents. For example, when treatment provides positive relational information, the value (or respected status) of the subordinate relative to the authority (and relative to the broader groups that authority represents, including the nation-state) is confirmed (Bradford 2014; Tyler and Blader 2003; Tyler and Wakslak 2004).

However, group membership may also act as a lens through which public perceptions of authority-subordinate interactions are shaped. Group membership is multifaceted, and various identifiers may constitute in- or out-group membership in a given circumstance. Race is an aspect of group membership identification that is crucial to understanding interactions between legal authorities and subordinates. In fact, in the American context, race has been described as *the* starting point for research exploring public perceptions of police (Skogan 2006). A wealth of research demonstrates that racial and ethnic minorities report more negative experiences with and attitudes towards police than non-minorities in not only the US (Tyler 2016) but also Western democracies more generally, including the UK (Bowling, Parmar, and Phillips 2003), Canada (Cao 2014), and Australia—the country in which the current study was conducted (Goodman-Delahunty 2010; Murphy and Cherney 2011; Sum, Chan, and Legosz 2009). Racial disparities in treatment by legal authorities (that advantage racial in-group members and disadvantage racial out-group members) remain a prominent area of international conversation.

While *personal* perceptions of out-group status have been demonstrated to influence *personal* interpretations of interactions with authorities (e.g., Sargeant et al. 2016; Smith et al. 1998; van Proojen, van den Bos, and Wilke 2002), it may also be the case that a clear indication of out-group membership impacts third-party evaluations of authority-subordinate interactions. Specifically, the common knowledge

that out-group members (particularly racial and ethnic minorities) have a history of experiencing more negative interactions with legal authorities relative to in-group members may make out-group status itself a salient factor that influences third-party evaluators' perceptions of treatment and outcomes administered by law enforcement. Existing literature suggests that the relationship between perceptions of procedural justice and group membership in law enforcement contexts is complicated and that relationship may be further complicated when surveillance technology is introduced into an interaction.

Using technology to mediate encounters with legal authorities is intended, in part, to ensure equality in the administration and outcomes of law. However, that does not mean that technologically mediating encounters with authorities renders interactions more transparent or neutral for groups that have been the target of historical discrimination; in fact, there is ample evidence to suggest this is not the case (Bennett-Moses and Chan 2018; Gandy 2010; Sanders and Hannem 2012). Technologically mediated interactions present the opportunity for legal authorities to cast a wider net in the search for suspicious persons, a process that may result in (out-)group-based scrutiny (Lyon 2003). Yet, there may be some contexts in which technologically mediating authority-subordinate interactions diminishes perceptions that out-group members are subject to discriminatory bias (e.g., when technological mediation increases the appearance of transparency and neutrality in decision-making processes; Hasisi and Weisburd 2011).

Significance of the Present Research

We conduct an exploratory investigation into the effects of technological mediation and group membership on third-party evaluations of an authority-subordinate interaction in the context of an airport border crossing. We test three research questions in the study. First, (*RQ1*): does encounter type (interpersonal versus technologically mediated) affect third-party evaluations of procedural and distributive justice? Second, (*RQ2*): do the effects of encounter type on evaluations of the interaction (procedural or distributive justice) vary as a function of the authority's and subordinate's relative group membership (in-group versus out-group)? Finally, (*RQ3*): if encounter type impacts perceptions of distributive justice, do procedural justice perceptions mediate that relationship?

Predictions regarding the research questions draw from procedural justice research and the small body of work exploring technologically mediated interactions with legal authorities. Such work reveals that technologically mediated encounters influence subordinates' evaluations of procedures and outcomes differently in different contexts. For example, while research demonstrates that technologically mediated encounters in the form of automated licence plate recognition fail to convey adequate attention to key relational justice concerns (Merola, Lum, and Murphy 2019; Wells 2008; Wells and Willis 2012), introducing technological mediation into authority-subordinate interactions at airports has been demonstrated to enhance procedural justice judgments (Hasisi and Weisburd 2011). On this basis, in response to *RQ1* we predict that:

H1: Procedural justice concerns (except voice) and distributive justice will be evaluated more positively in technologically mediated encounters compared to interpersonal encounters. In contrast, voice is expected to be evaluated more negatively in technologically mediated encounters.

The prediction related to voice is in line with Wells' (2008) reflections on the (in)capability of technology to leave one feeling heard.

To address *RQ2*, we again draw on procedural justice research but offer a more speculative prediction due to a lack of existing empirical research. First, we expect that highlighting the authority and subordinate as relative racial out-group members will prompt more negative evaluations of the process and outcomes than when the authority and subordinate are described as relative racial in-group members. However, we anticipate an interaction effect between encounter type and group membership based on the assumption that technological mediation will be interpreted by participants as an effort to remove discrimination from the authority-subordinate interaction in this context. We expect this attention to discrimination reduction will

be linked to perceptions of respectful, neutral, and trustworthy treatment—three core aspects of procedural justice concerns. As such, we predict that:

H2: Technological mediation will create a floor effect that inhibits the direct effect of racial group membership on our dependent measures; both in- and out-group members' treatment and outcomes will be evaluated as equivalent across all measures when the interaction is technologically mediated, but out-group members' interactions will be evaluated more negatively when the interaction is interpersonal.

Finally, in response to *RQ3*, we predict that:

H3: Procedural justice judgments will mediate the relationship between encounter type and distributive justice judgments.

This hypothesis rests, in part, on *H1*—that technological mediation will enhance perceptions of procedural justice—and then engages the traditional propositions of procedural justice theory to predict that perceptions of treatment (i.e., procedural justice concerns) influence perceptions of outcomes (Lind and Tyler 1988; Thibaut and Walker 1975; Tyler 2017).

We employ an experimental vignette design to test these predictions. The employment of experimental methods is a contribution of the research. Experimental work has rarely been used to explore public evaluations of legal authorities' use of surveillance technologies, but the approach is critical to identifying causal relationships—directly testing the effects of manipulated factors on participants' perceptions. Laboratory designs are especially important to underdeveloped areas of research as they allow for the precise isolation, control, and manipulation of aspects of a procedure (Saulnier and Sivasubramaniam 2015). Identifying these causal relationships is essential to understanding public perceptions of the increasingly technologically mediated nature of public interactions with legal authorities and advocating for data collection strategies that are acceptable and satisfying to the public that they are intended to serve.

Method

Design and Procedure

The study was conducted as a 2 (encounter type: interpersonal, technologically mediated) x 2 (group membership: in-group, out-group) between-subjects experimental design, with participants randomly assigned to conditions. Participants read a vignette about a traveller being directed to additional screening at an airport without explanation (see Appendix A). In the vignette, group membership was manipulated by varying the description of the traveller's relationship to the nation-state. The traveller was either described as someone who was born in the country and meets visual expectations regarding the dominant group's racial heritage (in-group) or as someone who was not born in the country and does not meet visual expectations regarding the dominant group's racial heritage (out-group). Encounter type was manipulated by varying the description of the source of the surveillance that directed the traveller to a secondary screening border officer. This initial source was described either as a human being (interpersonal) or as an automated kiosk (technologically mediated). The traveller's belongings were searched during the secondary screening and the traveller was not found to have done anything wrong. After reading the story, participants completed a short survey, answering questions about perceptions of treatment during the encounter and the encounter's outcome.

Dependent Measures

The dependent measures consist of procedural and distributive justice items adapted from existing literature. Confirmatory factor analysis was used to identify the structure of the variables. Four factors (each consisting of multiple items) were identified as separate measures of *procedural justice* while *distributive justice* was measured through one factor consisting of multiple items. Correlation tables and factor loadings for these

variables are presented in Appendix B. In the following descriptions, italics are used to specify the names of the scales constructed. All items comprising these measures were assessed on a seven-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*), including a neutral option at the midpoint of the scale.

The four factors that comprise the procedural justice measures are: treatment, procedure trust, authority trust, and voice. *Treatment* consisted of respect and neutrality items amalgamated from two pre-existing scales (Cronbach's $\alpha = .93$). Four items were adapted from the scale that formed Heuer et al.'s (2002; Cronbach's $\alpha = .87$) respect measure. These items were:

During the inspection of the declaration card...

- ... the traveller was treated politely.
- ... the traveller was treated with dignity.
- ... the traveller was treated disrespectfully.
- ... the traveller's rights were respected.

In addition, a separate set of two neutrality items (adapted from Tyler [1989; Cronbach's $\alpha = .83$]) loaded on this same factor. These items were:

The inspection of the declaration card was...

- ... a neutral procedure.
- ... conducted in a neutral way.

Procedure trust is composed of three items focused on trust in the procedure used to administer the surveillance (Cronbach's $\alpha = .93$). The items were modelled after items in Tyler's (2005) larger trust measure:

- I trust in the surveillance procedure used to inspect the declaration card.
- I trust in the surveillance procedure used to inspect the declaration card in this instance.
- The surveillance procedure used to inspect the declaration card was trustworthy.

Authority trust is composed of four items that focused on the extent to which the authority administering the surveillance procedure is evaluated as trusting the subordinate (Cronbach's $\alpha = .89$). The items were also modelled after items in Tyler's (2005) larger trust measure:

- The authority administering the declaration inspection believes that the traveller is trustworthy.
- The authority employing the source of surveillance believes that the traveller is trustworthy.
- The traveller is trusted by the authority...
- ... who governs the country the traveller is trying to enter.
- ... employing the source of surveillance.

Finally, *voice* is composed of three items that focused on the extent to which the traveller had input during the interaction (Cronbach's $\alpha = .79$). These three items were adapted from Heuer et al. (2002; Cronbach's $\alpha = .76$):

The traveller had...

- ... influence in the procedure used to inspect the declaration card.
- ... control over the procedure used to inspect the declaration card.
- ... a say in the procedure used to inspect the declaration card.

The *distributive justice* construct consisted of six items drawn from two pre-existing scales focused on evaluations of outcomes (Cronbach's $\alpha = .95$). Three items were adapted from Heuer et al.'s (2002; Cronbach's $\alpha = .95$) outcome fairness measure:

The outcome of the inspection of the declaration card was fair.
 The outcome of the inspection of the declaration card was not fair.
 The inspection of the declaration card produced a fair result.

The remaining three items were adapted from Murphy and Barkworth's (2014; Cronbach's $\alpha = .94$) outcome satisfaction measure:

I am satisfied with the outcome produced by the inspection of the declaration card.
 I am pleased with the outcome produced by the inspection of the declaration card.
 I am not satisfied with the outcome produced by the surveillance process.

Participants

Introductory psychology students at a mid-sized Australian university participated in the study in exchange for course credit. After removing data from participants who elected to withdraw during the survey or who provided largely incomplete questionnaires, the starting sample consisted of 365 participants. An additional 21 cases were removed as participants who completed the study inordinately fast (having taken less than half of the median survey completion time). Manipulation checks were then applied to this reduced sample of 344 participants. The first manipulation check assessed participant awareness of the group membership manipulation. Participants were asked whether the traveller in the story was described as similar to the majority of people in the country in terms of racial heritage. A total of 26 people failed this manipulation check, equally spread between the in- and out-group conditions. In addition, a continuous manipulation check indicated that the group membership manipulation was perceived as intended. A 2 (encounter type: interpersonal, technologically mediated) $\times$ 2 (group membership: in-group, out-group) between groups ANOVA was conducted with perceived group membership as the dependent variable. There was a significant main effect of the group membership manipulation on perceived group membership, ($F(1, 273) = 1328.44, p < .001, \eta^2_p = .83$), indicating that participants in the in-group condition perceived the authority and traveller as more similar group members ($M = 4.65, SD = 0.77, 95\% \text{ CI } [4.53, 4.78]$) than did participants in the out-group condition ($M = 1.49, SD = 0.67, 95\% \text{ CI } [1.37, 1.61]$).

The second manipulation check assessed participant awareness of the encounter type manipulation. Participants were asked whether the declaration card of the traveller in the story was assessed by a person. A total of 40 people failed this manipulation check, with 35 failing to recognize that their declaration card was evaluated by an automated kiosk. While the vignette is clear that an automated kiosk evaluated the traveller's declaration card in the technologically mediated condition, both encounter type conditions described the traveller as interacting with a human agent who searched their luggage after the declaration card was evaluated. The accuracy rate of the manipulation check may have been higher if the item had asked participants if the declaration card was evaluated by an automated kiosk rather than a human agent.

Participants who responded incorrectly to either manipulation check were removed from the sample. The final sample ($N = 278$) was 76.1% women with a mean age of 33.44 ($SD = 11.16$) years and a range of 17 to 69 years. The most common racial/ethnic origins were Caucasian (84.5%) and Asian (6.9%).

Results

Two sets of analyses were used to test the predictions. First, two-way between groups ANOVAs were conducted to assess the direct ($H1$) and interaction ($H2$) effects of encounter type and group membership on perceptions of procedural and distributive justice. In addition, encounter type produced significant main

effects on both procedural and distributive justice judgments, providing a justification to proceed with a mediation analysis (*H3*).

Effects of Encounter Type and Group Membership on Procedural and Distributive Justice

A series of 2 (encounter type: interpersonal; technologically mediated) x 2 (group membership: in-group; out-group) between groups ANOVAs were conducted with the procedural justice measures and distributive justice as the dependent variables to test *H1* and *H2*. Largely consistent with *H1*, encounter type produced significant main effects on three of the five dependent variables in the direction expected (see Table 1). Technologically mediated encounters were evaluated more positively than interpersonal encounters in terms of treatment, authority trust, and distributive justice. However, our prediction that procedure trust would be greater in the technologically mediated (compared to the interpersonal) condition was not supported, nor was our prediction that perceptions of voice would be significantly diminished in the technologically mediated (compared to the interpersonal) condition. Neither of these judgments were significantly different across encounter type conditions.

None of these analyses provided evidence of an interaction effect between encounter type and group membership (*p* values > .46; η^2_p values < .002), refuting the bulk of our prediction for *H2*. However, consistent with part of *H2*, group membership produced significant main effects on all dependent variables in the direction expected (see Table 2). Specifically, the experience of a traveller characterized as an out-group member was evaluated more negatively than that of an in-group member across all measures.

	Interpersonal			Technologically mediated			<i>p</i>	η^2_p
	Mean	SD	95% CI	Mean	SD	95% CI		
Treatment	3.78	1.43	[3.57, 4.02]	4.80	1.49	[4.57, 5.06]	.001	.12
Voice	1.97	1.09	[1.80, 2.16]	1.94	1.15	[1.75, 2.14]	.82	.000
Procedure trust	3.67	1.63	[3.43, 3.94]	4.04	1.65	[3.77, 4.33]	.06	.01
Authority trust	2.81	1.33	[2.61, 3.04]	3.44	1.41	[3.22, 3.68]	.001	.05
Distributive justice	4.05	1.70	[3.80, 4.32]	4.63	1.56	[4.35, 4.92]	.01	.03

Table 1: Effects of encounter type.

	In-group			Out-group			<i>p</i>	η^2_p
	Mean	SD	95% CI	Mean	SD	95% CI		
Treatment	4.65	1.46	[4.56, 4.93]	3.87	1.53	[3.68, 4.14]	.001	.07
Voice	2.14	1.19	[1.95, 2.33]	1.79	1.02	[1.61, 1.97]	.01	.02
Procedure trust	4.21	1.61	[3.94, 4.49]	3.49	1.62	[3.25, 3.78]	.001	.05
Authority trust	3.46	1.38	[3.26, 3.71]	2.76	1.34	[2.57, 3.00]	.001	.07
Distributive justice	4.57	1.54	[4.32, 4.87]	4.08	1.73	[3.84, 4.37]	.01	.02

Table 2: Effects of group membership.

Mediating Effect of Procedural Justice on the Relationship between Encounter Type and Distributive Justice

Finding significant main effects of encounter type on some procedural justice measures as well as the distributive justice measure justified proceeding with a mediation analysis. Drawing on the traditional framework proposed by procedural justice theory (that procedural justice concerns influence outcome evaluations; Lind and Tyler 1988; Thibaut and Walker 1975; Tyler 2017), the analysis explored whether procedural justice concerns (impacted by encounter type) mediated the relationship between encounter type and perceptions of distributive justice. We tested paths from encounter type (i.e., the predictor) to perceptions of treatment and authority trust (i.e., the procedural justice mediators) to distributive justice perceptions (i.e., the dependent variable) using PROCESS macro Model 4 (Hayes 2018).

The analysis is depicted visually in Figure 1. Consistent with the ANOVA results, technologically mediated interactions were associated with more positive evaluations of treatment than interpersonal interactions, $b = 1.01$, $t(275) = 5.75$, $p < .001$. Likewise, perceptions that the subordinate was trusted by the authority were greater in technologically mediated interactions than interpersonal interactions, $b = 0.62$, $t(275) = 3.77$, $p < .001$. In turn, more positive perceptions of procedural treatment were associated with enhanced perceptions of distributive justice, $b = 0.65$, $t(273) = 12.02$, $p < .001$. As well, more positive perceptions of authority trust were associated with enhanced perceptions of distributive justice, $b = 0.23$, $t(273) = 4.47$, $p < .001$.

Most importantly, although encounter type was associated with a significant increase in distributive justice perceptions prior to the inclusion of the mediators in the model ($b = 0.58$, $t(275) = 2.94$, $p < .01$), this effect was rendered not significant once the procedural justice measures (treatment and authority trust) were accounted for ($b = -0.24$, $t(273) = -1.62$, $p = .10$). The results suggest that the initially observed direct effect of encounter type on outcome judgments is the result of an indirect effect—of encounter type on perceptions of treatment and authority trust (perceptions that are antecedents to procedural justice). Technologically mediated interactions positively impact interpretations of authority trust and treatment, which, in turn, enhance perceptions of outcome judgments (in this context). The indirect effects indicate that perceptions of authority trust mediate the relationship between encounter type and distributive justice ($ab = 0.16$, $CI[0.05, 0.30]$), but that the stronger mediator is perceptions of procedural treatment ($ab = 0.66$, $CI[0.41, 0.93]$).

Figure 1: Effects of encounter type on distributive justice mediated by procedural justice concerns. Note: the dashed line represents the total effect prior to accounting for the influence of the mediators, * $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

Contemporary surveillance strategies used by legal authorities are focused on increasing authority “intelligence” through technologically mediated data collection and analysis (Chan and Bennett-Moses 2016; Innes et al. 2009; Ratcliffe 2014). Technologically mediated surveillance extends the abilities of legal authorities to record, store, and analyze encounters with the public, and this trend is only expected to grow (Joh 2016; Wells 2008). To date, little research has examined the causal mechanisms driving public reactions to this developing style of interactions with legal authorities.

In the context of interpersonal interactions, attention to process has proven key to public evaluations of, and reactions to, legal authorities (Jonathan-Zamir, Hasisi, and Margalioth 2016; Mazerolle et al. 2013). Here, we explored the extent to which interpersonal procedural justice concerns remain relevant during technologically mediated interactions with legal authorities. While it is important to recognize that public evaluations of varied technologies administered by varied authorities in varied contexts are not expected to

be uniform, we maintain that a foundation informed by procedural justice theory might prove useful to understanding public evaluations of, and reactions to, technologically mediated interactions with legal authorities not only in the context of border security checks but also more generally.

Central to the present research was testing how encounter type (interpersonal versus technologically mediated) affected public evaluations of procedural and distributive justice judgments in the context of an airport security check. We were interested in whether encounter type would affect third-party evaluations of the procedural and distributive justice of the authority-subordinate interaction. We predicted that most of our procedural justice measures (specifically, treatment, procedure trust, and authority trust) as well as distributive justice would be evaluated more positively in technologically mediated encounters, compared to interpersonal encounters, and that technologically mediated encounters would produce more negative evaluations of voice than interpersonal encounters.

We found that evaluations of treatment, authority trust, and distributive justice were enhanced in technologically mediated interactions (as predicted). Procedure trust was not significantly affected but approached significance and showed a pattern of mean differences in line with our prediction (with technologically mediated interactions being evaluated more positively). These findings complement those of Hasisi and Wesiburd (2011), whose research was also situated in the context of an airport and demonstrated that technologically mediated interactions were evaluated more positively than interpersonal interactions. In combination, the findings provide some indication that the incorporation of technological mediation into encounters with legal authorities at airports/border crossings may improve public evaluations of these encounters. However, that conclusion should not suggest that replacing interpersonal interactions with technologically mediated interactions in and of itself genuinely improves the neutrality of a procedure or that the effects demonstrated here will carry over to other contexts. In fact, evidence suggests that this improvement does not occur in the context of traffic stops and speeding enforcement (Merola, Lum, and Murphy 2019; Wells 2008; Wells and Willis 2012).

Likewise, our unsupported prediction regarding voice in this study may be an artefact of context. While there may be many contexts in which replacing human interaction with technology diminishes perceptions of voice (Wells 2008), the airport may not be such a setting. Airports, and border crossings more generally, may be contexts where persons feel voice is particularly limited, prompting both interpersonal and technologically mediated interactions with authorities to receive similarly low voice evaluations in these contexts (as we saw in this study).

We were also interested in whether observed effects of encounter type would vary as a function of the authority's and subordinate's relative group membership. We speculated that when the interaction was technologically mediated, both the in- and out-group conditions would be evaluated as equivalent in terms of procedural and distributive justice judgments, but that when the interaction was interpersonal, the out-group condition would be evaluated more negatively than the in-group condition. However, we found no indication of any interaction effects. These null effects may be related to the perspective we built into the design of this study. We used a third-person perspective instead of a first-person perspective (i.e., having participants imagine themselves as the traveller). The predicted interaction might have been obtained if we had used a more visceral, first-person perspective. While data on the first-person perspective is important, the third-person perspective is also valuable, allowing for more general public appraisals of policies and procedures by demonstrating attitudes about the experience of another. It would be interesting for future inquiries to assess if encounter type and group membership interact when participants personally identify as an in- or out-group member relative to authorities.

Despite this caveat, the finding that out-group members' experiences were evaluated more negatively than in-group members' experiences regardless of encounter type is important. While we recognize that there are situations in which out-group members are in fact treated objectively worse than in-group members, in this experiment, all details of the encounter (aside from group membership and encounter type) were held constant. The finding underscores the importance of group membership as a driver of evaluations; when

group membership is apparent—specifically, perceptions of out-group membership that are tied to race—then group membership itself drives evaluations of the experiences of others, even when the characteristics of the encounter are held constant across in-group and out-group members. One explanation for this effect is that when authorities and subordinates are characterized as relative in-group members, more positive evaluations of treatment and outcomes may be attributed to the ability to apply more benign motives (such as protection) to the actions of the authority. In a complementary vein, some scholars have suggested that greater perceptions of shared social identity between authorities and subordinates prompt less critical evaluations of authorities out of a desire to legitimate the actions of these authorities (Sargeant et al. 2016; Tyler and Huo 2002).

Finally, we were interested in whether procedural justice perceptions mediated the relationship between encounter type and perceptions of distributive justice. Drawing on procedural justice theory, we expected that procedural justice concerns would influence perceptions of outcomes (Lind and Tyler 1988; Thibaut and Walker 1975; Tyler 2017). Other studies have demonstrated that manipulations of “encounter type” (e.g., authority behaviour in interpersonal contexts) between legal authorities and subordinates produce effects on subordinates’ evaluations of outcomes that are mediated by treatment (Demir et al. 2020; Mazerolle et al. 2013). We find evidence of these same trends: Encounters that were technologically mediated enhanced some procedural justice perceptions (specifically, treatment and authority trust), which, in turn, were associated with enhanced distributive justice judgments (mediating the originally observed relationship between encounter type and distributive justice). Our effort responds to calls by scholars to explore factors that positively impact procedural justice concerns during interactions with legal authorities (Jonathan-Zamir, Hasisi, and Margalioth 2016; Tyler 2016), and our findings shed light on the way in which technology might be used to enhance the quality of public perceptions of law enforcement in this context.

However, technology may not have this effect in other contexts. For instance, mass surveillance of internet searches and text messages has been associated with diminished perceptions of trust in administering authorities, with the public expressing concerns regarding implications for privacy (American Civil Liberties Union 2013; Lum et al. 2010; Merola and Lum 2012). Leveraging technology to mediate the collection and analysis of public data may have negative effects on public evaluations of legal authorities when the deployment of the technology diminishes perceptions of the benevolence and trustworthiness of the authority. The procedural justice literature has historically conceptualized trust as subordinates’ evaluations of the perceived benevolence of an authority—that the authority’s actions are indicative of goodwill (Tyler 1989; Tyler 1994)—which has also been connected to the transparency of authority actions (Jonathan-Zamir, Mastroski, and Moyal 2015; Schafer 2013; Tyler 2004). While this conceptualization of trust remains important, another relevant conceptualization of trust in contexts of mass surveillance is the extent to which an authority’s actions make subordinates feel that they are *trusted* (which our authority trust measure assessed in this study). Research demonstrates that feelings of overzealous surveillance negatively affect authority-subordinate relations by communicating to subordinates their status as objects of suspicion (Tyler, Jackson, and Mentovich 2015). Such feelings may be exacerbated by technologically mediated data collection and analysis, which extend the scope of surveillance scrutiny. For instance, Merola, Lum, and Murphy (2019) found that participants exposed to police use of automated licence plate recognition in stimulus materials reported lower levels of trust in police compared to a control group.

A small body of research is now accumulating that suggests that technological mediation may affect evaluations of legal authorities. For example, both perceptions of trust and neutrality might be improved when technology is perceived as removing opportunities for human bias/out-group suppression. Hasisi and Weisburd (2011) suggest that technologically mediated (as opposed to interpersonal) interactions that make the process of authority decision-making more transparent (which may promote the assumption that the process is bias free) may enhance perceptions of procedural justice in the context of airport security checks. However, technologically mediated encounters that serve to render authority decisions less transparent (e.g., proprietary predictive algorithms) may not enhance but rather diminish perceptions of neutrality. While bias-free outcomes are often assumed to accompany digitally rendered decision-making, this assumption has been heavily critiqued (Bennett-Moses and Chan 2014, 2018; Gandy 2010). Further, attention to the

flawed nature of that assumption may vary based on the extent to which people perceive themselves as targeted by (versus protected by) the intervention in question. Given that technologically mediated interactions can be used to reveal or shroud the neutrality of decision-making processes and outcomes, the extent to which a context has historically been characterized by discrimination may be an important predictor of public evaluations of legal authorities' use of technology for data collection and management.

Likewise, while technologically mediating encounters with legal authorities may help to convey perceptions of respect in some contexts (e.g., BWCs generating higher levels of self-awareness that translates to more polite interactions), it may violate expectations of respect in other contexts. For example, Wells and Wills' (2012) finding that technologically administered traffic citations that label the driver as a "law breaker" leave drivers more dissatisfied than interpersonal interactions could be evidence of perceptions of disrespect. Wells (2008: 801) comments insightfully on the challenge posed to perceptions of respect and voice by technologically mediated interactions, noting that "a machine is unable to demonstrate respect, respond politely or provide the ears necessary for an individual to feel that their voice has been heard." Thus, while increased perceptions of voice can be imagined in some technologically mediated contexts, this may not be true in other contexts involving the more automated uses of technology. However, even when technologically mediated interactions with legal authorities provide limited opportunities for voice, this does not necessarily mean that *perceptions* of voice might not be differently impacted among groups with historically poor relations with the legal authority and context in question. "Technology operates in a social context and its meaning is perceived differently by people in different social and organisational positions" (Bennett Moses and Chan 2014: 668). Different social groups are likely to perceive and react to technology differently (Chan and Bennett Moses 2016).

In short, procedural justice theory serves as a useful starting point for conceptualizing how the public evaluates technologically mediated interactions with authorities, but there are many specific factors to consider in the assessment of any particular context. For example, factors that we could expect to influence interpretations include: the specific technology used (e.g., familiar or unfamiliar technologies), the purpose of the technology used (e.g., efforts to remove human bias, speed up interactions, or provide objective accounts of interactions), as well as details of the context in question (e.g., landscapes in which behaviour is expected to be highly restricted, such as airports, versus those where behaviour is expected to be much less conforming, such as online). To assist in navigating the complex relationships and outcomes that are likely to drive evaluations of varied forms of technologically mediated interactions with varied legal authorities in varied contexts, we suggest relying on procedural justice theory. This foundation provides a base from which researchers can reflect on how particular technologies, authorities, and contexts may enhance, diminish, or have no effect on people's core concerns about how they are treated. Such an approach allows for a common theoretical foundation to be flexibly used to hypothesize and test the diverse mechanisms driving public responses to contextually specific, technologically mediated authority-subordinate interactions.

Research Limitations and Future Directions

It is important to acknowledge limitations of our work alongside this discussion; in particular, limitations associated with our sample and method. The study relied on undergraduate students, and future research does need to explore these relationships in community samples. However, the sample we used is well-suited to the context of our vignette: airport border crossings. While we do not have data on the travel experiences of these participants, the fact that our participants are largely young and educated suggests that they are more likely to have had experiences travelling through airports. Although it is very important that research of the kind that we have presented and proposed here be conducted with more diverse samples than the one we acquired, the results offer an early investigation into an underdeveloped area of work that requires further research attention.

Similarly, as a vignette study, the extent to which the relationships identified here are indicative of real-world relationships can be questioned. In particular, the random assignment of participants in this study to view an in-group or out-group traveller required an experimental manipulation that explicitly referred to the

racial group membership of the traveller. This manipulation may have primed participants to consider racial group membership in a way that may not have occurred spontaneously, thereby artificially boosting the impact of racial group membership on evaluations of this encounter. Future work might include a third level of this manipulation, in which no information about racial group membership is presented, to test the effect of racial group membership information itself on evaluations of encounters with authorities. In addition, our manipulation of group membership is effectively a race manipulation, and so our results pertain to racial group membership in particular. While we consider this important, because race is an aspect of group membership identification that is crucial to understanding interactions between legal authorities and subordinates, further work is needed to clarify the generalizability of these results to other manifestations of group membership.

However, experimental laboratory work is a key first step to identifying the nature of relationships that can then be vetted through experimental field work. In addition, the vignette we developed did not ask participants to imagine themselves as the traveller but rather presented a story that participants were asked to comment on. This approach is not intended to capture perceptions of hypothetical personal experiences, but, instead, more general public evaluations of the procedure and its outcome for *others*. An important continued direction for research is to explore the impact of perspective on these evaluations (e.g., evaluating fairness and satisfaction perceptions when one is cast in the role of targeted subject versus the more removed position of rendering evaluations in relation to the experiences of others). In fact, comparing these perspectives is a critical area of research. Persons may be more supportive of legal authorities' use of surveillance technologies when they do not directly equate the technology with affecting themselves. Teasing out such differences in perceptions is important to developing rational responses to knee-jerk policies grounded in public opinions of the value of increased surveillance for *others*.

Conclusion

We sought to draw attention to an underdeveloped area of research by presenting a theoretically informed discussion and complementary empirical analysis of whether and how public evaluations of interactions with legal authorities are affected when these interactions are technologically mediated. A wealth of procedural justice research demonstrates that treatment-oriented concerns are highly influential on public evaluations of the processes and outcomes of interactions with legal authorities. As such, we drew attention to procedural justice theory as a starting point to theorize and test public evaluations of a specific instance of a technologically mediated interaction with a legal authority. We found that technologically mediated encounters were evaluated more positively in terms of procedural and distributive justice judgments and that procedural justice judgments mediated the relationship between encounter type and outcome judgments. Situating these findings in relation to a small body of projects engaged with similar questions, it is apparent that, despite variations in specific conclusions (i.e., that some technological interventions have enhanced, while others have diminished, public evaluations of the procedural justice of interactions with legal authorities), a body of evidence is now building that suggests that technological mediation *affects* public evaluations of interactions with authorities. As such, legal authorities need to reflect carefully on the contextually specific ways in which particular technologies affect public perceptions of respect, trust, neutrality, and voice to promote interactions with legal authorities that the public evaluates as fair and satisfying. In a time when legal authorities are struggling to maintain legitimacy, it is crucial to understand the ways in which the increasing emphasis on surveillance, and the uptake in technology to administer that surveillance, influence public perceptions of legal authorities.

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Appendix A

Experimental Vignette

Please read the following short story very carefully. In a moment, you will be asked some questions about the story.

[All]

A traveller has just returned to their country of residence after flying in from an international destination. At the airport they are given a declaration card to fill out which requires them to answer questions about their travels. Specifically, they are asked to list any goods they are bringing back with them as well as the monetary value of the goods. The traveller is not in violation of any rules regarding international travel and fills out the declaration card truthfully. The traveller then enters the Customs section of the airport to submit their declaration card.

[Encounter type: Interpersonal; Group membership: In-group]

They approach a Customs agent and present the declaration card. The Customs agent quickly reviews the card, stamps it with a large red X and directs the traveller to proceed to the additional screening section without further explanation. The traveller was born and raised in this country and meets all visual expectations regarding the dominant group's cultural and racial heritage.

[Encounter type: Interpersonal; Group membership: Out-group]

They approach a Customs agent and present the declaration card. The Customs agent quickly reviews the card, stamps it with a large red X and directs the traveller to proceed to the additional screening section without further explanation. The traveller was not born or raised in this country but did receive Permanent Residence status one year prior to travel, however, they are a visible minority in the country, not meeting visual expectations regarding the dominant group's cultural and racial heritage.

[Encounter type: Technologically-mediated; Group membership: In-group]

They approach an automated Customs kiosk and slide the declaration card into the machine. The machine quickly reviews the card, stamps it with a large red X and directs the traveller to proceed to the additional screening section without further explanation. The traveller was born and raised in this country and meets all visual expectations regarding the dominant group's cultural and racial heritage.

[Encounter type: Technologically-mediated; Group membership: Out-group]

They approach an automated Customs kiosk and slide the declaration card into the machine. The machine quickly reviews the card, stamps it with a large red X and directs the traveller to proceed to the additional screening section without further explanation. The traveller was not born or raised in this country but did receive Permanent Residence status one year prior to travel, however, they are a visible minority in the country, not meeting visual expectations regarding the dominant group's cultural and racial heritage.

[All]

The traveller is detained in the secondary screening section for approximately 30 minutes as an agent searches their luggage. However, the agent does not find anything in violation of regulations in the traveller's luggage and releases them without citation after completing the search.

Thinking about the traveller's encounter, please answer the following questions.

Questionnaire

Manipulation checks

The evaluation of the declaration card in this story was carried out by a person. (yes/no)

The traveller was described as similar to the majority of people in the country in this story, in terms of racial heritage. (yes/no)

Dependent variables organized by construct

All items were measured on a 7-point Likert scale with the following attributes: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither disagree or agree, 5 = somewhat agree, 6 = agree, 7 = strongly agree

Treatment

During the inspection of the declaration card, the traveller was treated politely.

During the inspection of the declaration card, the traveller was treated with dignity.

During the inspection of the declaration card, the traveller was treated disrespectfully.

During the inspection of the declaration card, the traveller's rights were respected.

The inspection of the declaration card was a neutral procedure.

The inspection of the declaration card was conducted in a neutral way.

Procedure trust

I trust in the surveillance procedure used to inspect the declaration card.

I trust in the surveillance procedure used to inspect the declaration card in this instance.

The surveillance procedure used to inspect the declaration card was trustworthy.

Authority trust

The authority administering the declaration inspection believes that the traveller is trustworthy.

The authority employing the source of surveillance believes that the traveller is trustworthy.

The traveller is trusted by the authority who governs the country the traveller is trying to enter.

The traveller is trusted by the authority employing the source of surveillance.

Voice

The traveller had influence in the procedure used to inspect the declaration card.

The traveller had control over the procedure used to inspect the declaration card.

The traveller had a say in the procedure used to inspect the declaration card.

Distributive justice

The outcome of the inspection of the declaration card was fair.

The outcome of the inspection of the declaration card was not fair.

The inspection of the declaration card produced a fair result.

I am satisfied with the outcome produced by the inspection of the declaration card.

I am pleased with the outcome produced by the inspection of the declaration card.

I am not satisfied with the outcome produced by the surveillance process.

Appendix B

Correlation Matrices and Factor Loadings

Table 1. Pearson's correlation matrix of treatment concerns.

Measure	1	2	3	4	5	6
1 During the inspection of the declaration card... the traveller was treated politely.	---					
2 ... the traveller was treated with dignity.	.75	---				
3 ... the traveller was treated disrespectfully.	.65	.70	---			
4 ... the traveller's rights were respected.	.67	.76	.72	---		
5 The inspection of the declaration card was a neutral procedure.	.64	.65	.64	.64	---	
6 The inspection of the declaration card was conducted in a neutral way.	.69	.69	.68	.68	.84	---
Factor loadings	.81	.88	.79	.80	.78	.81
M	4.01	3.93	4.65	4.43	4.31	4.17
SD	1.59	1.72	1.83	1.75	1.92	1.91

$N = 278$. All correlations are statistically significant, $p < .001$.

Table 2. Pearson's correlation matrix of procedure trust concerns.

Measure	1	2	3
1 I trust in the surveillance procedure used to inspect the declaration card.	---		
2 The surveillance procedure used to inspect the declaration card was trustworthy.	.80	---	
3 I trust in the surveillance procedure used to inspect the declaration card in this instance.	.84	.78	---
Factor loadings	.82	.80	.82

M	3.80	3.91	3.78
SD	1.80	1.71	1.80

$N = 278$. All correlations are statistically significant, $p < .001$.

Table 3. Pearson's correlation matrix of authority trust concerns.

Measure	1	2	3	4
1 The authority administering the declaration inspection believes that the traveller is trustworthy.	---			
2 The authority employing the source of surveillance believes that the traveller is trustworthy.	.68	---		
3 The traveller is trusted by the authority who governs the country that the traveller is trying to enter.	.66	.75	---	
4 The traveller is trusted by The authority employing the source of surveillance.	.64	.66	.68	---
Factor loadings	.80	.83	.81	.80
M	3.14	3.12	3.07	3.07
SD	1.63	1.58	1.62	1.60

$N = 278$. All correlations are statistically significant, $p < .001$.

Table 4. Pearson's correlation matrix of voice concerns.

Measure	1	2	3
1 The traveller had influence in the procedure used to inspect the declaration card.	---		
2 The traveller had control over the procedure used to inspect the declaration card.	.54	---	
3 The traveller has a say in the procedure used to inspect the declaration card.	.64	.50	---
Factor loadings	.87	.76	.84
M	1.97	2.02	1.98
SD	1.30	1.39	1.31

$N = 278$. All correlations are statistically significant, $p < .001$.

Table 5. Pearson's correlation matrix of distributive justice concerns.

Measure	1	2	3	4	5	6
1 The outcome of the inspection of the declaration card was fair.	---					
2 The outcome of the inspection of the declaration card was not fair.	.83	---				
3 The inspection of the declaration card produced a fair result.	.84	.78	---			
4 I am satisfied with the outcome produced by the inspection of the declaration card.	.86	.75	.84	---		
5 I am pleased with the outcome produced by the inspection of the declaration card.	.84	.79	.80	.88	---	
6 I am not satisfied with the outcome produced by the surveillance process.	.67	.66	.65	.70	.70	---
Factor loadings	.94	.89	.91	.93	.93	.80
M	4.30	4.45	4.31	4.25	4.16	4.45
SD	1.85	1.88	1.82	1.85	1.83	1.83

N = 278. All correlations are statistically significant, $p < .001$.