TESTING THE EFFECTS OF PROCEDURAL JUSTICE AND OVERACCOMMODATION IN TRAFFIC STOPS

A Randomized Experiment

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Research shows that perceptions of procedural justice influence people's trust, confidence, and obligation to obey law and legal authorities as well as their willingness to cooperate with and support legal authorities. Interpersonal interaction styles that are central to procedural justice theory also play a key role in communication accommodation theory (CAT). Based on video clips depicting a police traffic stop, we use a randomized experiment to test the effects of procedural justice and overaccommodation on trust in police, willingness to cooperate with police, and obligation to obey police and the law. The results demonstrate that procedural justice has more powerful effects than overaccommodation on reported trust and confidence in the officer, as well as respondents' obligation to obey and willingness to cooperate with the officer. Moreover, although procedural justice generated strong effects on encounter-specific attitudes, it did not exert any effect on more general attitudes toward police.

Keywords: procedural justice; communication accommodation; linguistics; police; randomized experiment

When people think of police work, they typically imagine high-speed chases, crime-scene investigations, and physical confrontations with suspects. However, a substantial portion of police work involves simply communicating with the public (Giles et al., 2006). Indeed, some scholars argue that verbal communication is the core technology of policing (Sklansky, 2011), and a central theme of the research on procedural justice and legitimacy in policing is that how police officers talk to people matters (Tyler, 2006; Tyler & Huo, 2002). The interpersonal interaction styles that play such a key role in procedural

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justice theory are also an important part of communication accommodation theory (CAT) from the field of linguistics. The two theories have similar implications for thinking about how police officers as authority figures talk to people who are subject to their authority. Research suggests, for instance, that people's perceptions of procedural justice during interactions with police have a powerful influence on trust and confidence in the police, perceived obligation to obey the police (and the law more generally), and willingness to cooperate with the police (Tyler, 2006; Tyler & Huo, 2002). Similarly, a separate body of research from CAT shows that the use of accommodative communication styles by police officers improves citizen trust and satisfaction and has an indirect effect on compliance (Giles et al., 2006; Giles, Hajek, et al., 2007; Giles, Willemyns, Gallois, & Anderson, 2007). This study uses a randomized experiment to test hypotheses derived from procedural justice theory and CAT.

Whereas procedural justice theory is now well known within criminology and criminal justice, CAT is still largely unknown. Much of the CAT literature, including the small subset that has been applied to policing, has been published in communications and linguistics journals. The theory, developed originally by Giles (1973), posits that individuals subconsciously modify characteristics of their speech (such as accent, rate of speech, and polite language) to match those of people with whom they are conversing. These characteristics communicate increased solidarity and a decrease in social distance. Giles, Hajek, et al. (2007) have found that perceived police accommodation is associated with greater trust in police and higher approval ratings. CAT shares many similarities with procedural justice theory, which posits that perceptions of procedural justice during encounters with legal authorities such as the police influence people's broader perceptions of the legitimacy of law and legal authorities. These legitimacy assessments, in turn, influence a variety of socially meaningful outcomes such as willingness to obey the law or to comply with the directives of legal authorities (e.g., Johnson, Maguire, & Kuhns, 2014; Tyler, 2004). Giles, Hajek, et al. (2007) acknowledged the overlap between CAT and procedural justice theory, both of which emphasize the positive effects that respectful communication can engender.

However, Giles and Smith (1979) have argued that although accommodation improves rapport, the use of overly accommodative language, which is referred to as overaccommodation, may actually decrease rapport. Put differently, there may be a non-linear relationship between accommodation and the benefits that are thought to derive from it, such as interpersonal trust and confidence. When faced with too much accommodation (overaccommodation), people may come to doubt the sincerity and in some cases, the authority, of those with whom they are conversing. Thus, although some level of accommodation during an interpersonal interaction is thought to produce certain benefits, overaccommodation goes too far and may be detrimental. Accordingly, this study tests the effects of procedural justice and overaccommodation on attitudes toward police. A randomized experiment is used to contrast the effects of three conditions—a control condition, a procedural justice condition, and an overaccommodation condition—on participants' trust in police, willingness to cooperate with police, and obligation to obey the police and the law.

REVIEW OF THE LITERATURE

PROCEDURAL JUSTICE

Theory and research on procedural justice originated within the discipline of social psychology (Leventhal, 1980; Thibaut & Walker, 1975; Tyler & Lind, 1992), but have diffused

rapidly into numerous other fields of study, including criminology and criminal justice. In particular, procedural justice theory now occupies a central role in scholarship on police and their relationships with the public (e.g., Johnson et al., 2014; Skogan & Frydl, 2004; Sunshine & Tyler, 2003; Tyler & Huo, 2002). The basic premise of procedural justice is that people's perceptions of the extent to which police behave in a procedurally just manner shape their more general appraisals of the institutional legitimacy of police.[1] These legitimacy assessments, in turn, influence people's willingness to comply or cooperate with the police and to obey the law.

According to Tyler and his colleagues, the relationships between procedural justice, legitimacy, and compliance/cooperation stem ultimately from the group value model. Based in social psychology, the group value model posits that individuals perceive themselves to be included or excluded from a group based on the type of treatment they receive from those in a position of authority (Lind & Tyler, 1988; Tyler & Lind, 1992; Tyler, Degoey, & Smith, 1996). Being treated with respect communicates that the authority figure values the individual and validates his or her position in the group or community. Conversely, disrespectful or unfair treatment marginalizes the individual and communicates that he or she is not a valued member of the community. Because police officers are granted the authority by the state to deprive people of their liberty (or, under certain circumstances, their lives), treating citizens in a procedurally unjust manner may undermine the perceived legitimacy of the laws and institutions that authorize that authority. However, when police officers behave in a procedurally just manner, their behavior may confer legitimacy on them as authority figures, on the police as an institution, and on the law more generally (Tyler, 2006; Tyler & Huo, 2002).

One branch of the procedural justice scholarship that has not yet received widespread attention in criminology and criminal justice is the idea of interactional justice (Bies & Moag, 1986; Maguire & Johnson, 2010). This concept, which is popular in the organizational justice literature, distinguishes between the fairness of the procedures used by an authority figure (procedural justice) and the dignity and respect shown by an authority figure during an interpersonal interaction with a subordinate (interactional justice). In the criminology and criminal justice literature, these two components (procedural and interactional) get blended together under the conceptual umbrella of procedural justice, but the treatment of these concepts in the organizational justice literature serves as a useful reminder that the tone of an interpersonal interaction between an authority figure and a subordinate plays a vital role in shaping attitudes toward that authority figure and the institution he or she represents (e.g., Bies, 2005).

Although there is now a significant amount of empirical research on procedural justice, most of this research uses cross-sectional data and does not rely on methodologies that allow for rigorous assessment of cause and effect (Mazerolle, Antrobus, Bennett, & Tyler, 2013; Sahin, 2014). Thus, basic questions still remain about what causes what in the dense nomological network of related concepts in which procedural justice is embedded (Johnson et al., 2014). However, two recent studies relied on randomized controlled trials (RCTs) to discern the effects of procedural justice in the context of police traffic stops.

The first RCT to investigate the effects of procedural justice was the Queensland Community Engagement Trial in Australia, in which drivers were stopped by police officers for random breath tests (Mazerolle et al., 2013). In the experimental condition, officers were supplied with a procedural justice script to implement during their interactions with

drivers. In the control condition, officers were instructed to follow standard police procedure. The study found that the experimental condition had a significant positive effect on perceptions of procedural justice during the stop. This was the only direct effect of the intervention tested in this study. The remaining outcomes examined by the authors flowed from these perceptions, not directly from the intervention itself. The results with regard to these effects differed for encounter-specific outcomes and general outcomes.[2] Perceptions of procedural justice during the encounter were associated with "levels of satisfaction with police, perceptions of police fairness and perceptions of police respect" (Mazerolle et al., 2011, p. 55), at both the encounter-specific and general levels (Mazerolle et al., 2013). Perceptions of procedural justice were also associated with "trust in police, confidence in police and compliance with police directives" (Mazerolle et al., 2011, p. 55), but only at the encounter-specific level, not at a more general level. Thus, perceptions of procedural justice following a brief interaction between police and the public appear to generate differential effects for encounter-specific outcomes and more general outcomes.

Another RCT examined the effects of a procedural justice intervention during routine traffic stops for speeding in Adana, Turkey (Sahin, 2014). The study found that incorporating the principles of procedural justice into the language used by police officers during a traffic stop had a significant effect on three of four encounter-specific outcomes. The procedural justice intervention improved citizen trust in, and satisfaction with, the police officer in the traffic stop. The procedural justice intervention also increased the extent to which citizens perceived the officer as behaving in a respectful manner. In contrast, the intervention did not result in greater perceptions of police fairness/neutrality during the stop. The intervention also resulted in a statistically significant increase in satisfaction with the police more generally, though the intervention did not result in significant differences in other measures of general attitudes toward police. These results from Turkey are roughly parallel with those from the previous study in Australia (see Mazerolle et al., 2013; Mazerolle et al., 2011). In both studies, measures of procedural justice during traffic stops appear to have differential effects on citizens' judgments and perceptions about the police officers involved in a specific encounter relative to judgments and perceptions about the police more generally. Taken together, the two RCTs conducted to date suggest that a brief procedural justice intervention implemented during traffic stops can produce meaningful differences in public opinions toward police. However, questions remain about the extent to which such interventions can influence both encounter-specific outcomes and more general outcomes.

CAT

CAT, called speech accommodation theory in its original form, states that individuals adjust characteristics of their language, including accent, rate of speech, and pauses, to be more or less similar to those of their conversational partners (Giles et al., 2006). This adjustment process is referred to as accommodation and it is performed subconsciously during conversations to convey an increase or decrease in social distance with conversational partners. Within the general strategy of accommodation, speakers' language may converge, reflecting an increase in solidarity, or diverge, indicating a decrease in solidarity, with their conversational partner (Giles, Hajek, et al., 2007). Thus, speakers may use language choice as a "barometer of the level of social distance between them" (Giles, Hajek, et al., 2007,

p. 134). Since its initial development, CAT has been refined to encompass a greater number of communicative features, including non-verbal gestures and behaviors (Giles et al., 2006).

A series of studies conducted by Howard Giles and his colleagues has applied CAT to the domain of police–citizen interactions. For example, Dixon, Schell, Giles, and Drogos (2008) examined the association between race and communication accommodation among drivers and police officers during traffic stops, finding that when the driver and officer were the same race, the quality of communication was improved. Using data from surveys of U.S. college students, English-speaking adults, and Spanish-speaking adults, Giles et al. (2006) found that perceived police accommodation is correlated with higher ratings of police performance by citizens as well as greater satisfaction with police interactions.[3] Subsequent studies conducted in the United States and in a multitude of countries across Asia and Africa have found that perceived communication accommodation by police is associated with higher trust, which in turn influences compliance with police (Barker et al., 2008; Hajek et al., 2006; Hajek, Giles, Barker, Lin, et al., 2008; Hajek, Giles, Barker, Makoni, & Choi, 2008). In several other countries, accommodation by police has been found to influence compliance directly and/or indirectly through trust (Barker, Choi, Giles, & Hajek, 2008-2009; Hajek, Giles, Barker, Makoni, et al., 2008).

In parallel with the procedural justice literature, research on CAT has found a relationship between communication, trust, and compliance. Giles and his colleagues make an explicit connection between the two bodies of theory and research:

> The law and society literature refers to police behaviours which parallel many forms of accommodation . . . Procedural justice theory and CAT are each based solidly in social psychology and acknowledge the prominence of communication in police-civilian interactions and, together, they might swing open the double doors to a better understanding of them. (Giles, Hajek, et al., 2007, p. 150)

Procedural justice theory has always emphasized the importance of the manner in which authority figures communicate with people subject to that authority. CAT provides a more explicit framework for thinking about the precise communication characteristics thought to engender greater rapport between conversation participants. CAT is useful for thinking about the linguistic dimensions of procedural justice and how these dimensions might be adjusted to engender positive outcomes such as improved trust and confidence in the police, increased obligation to obey the law or compliance with police directives, and greater cooperation with, and support for, the police.

OVERACCOMMODATION

Giles, Willemyns, et al. (2007) have proposed that there is a " . . . nonlinear relationship between accommodation and approval" (p. 143). Whereas accommodation will be welcomed by the recipient, after a certain level of accommodation, approval or rapport is likely to decrease. Overaccommodation, therefore, results when accommodation is taken past the point where it is considered socially appropriate by the conversational participant. The appropriate level of accommodation is governed by "social, situational, and status norms" (Giles, Willemyns, et al., 2007, p. 143).

Overaccommodation has been investigated extensively with respect to communication between generations. Research has found that people tend to address the elderly with shorter

utterances and words, more fillers and fragments, a slower rate of speech, and longer pause duration, characteristics which are often referred to as "elderspeak" (Kemper, 1994). These overaccommodative tendencies arise from stereotypes about the elderly (Caporael & Culbertson, 1986, Edwards & Noller, 1993; Williams, Kemper, & Hummert, 2005) and are often viewed by the recipients as insulting and patronizing (Balsis & Carpenter, 2005; A. Brown & Draper, 2003; Kemper, 1994; Sparks & Balazs, 1997; Williams et al., 2005). In the medical context, overaccommodation has been found to result in negative perceptions of physicians. Although building rapport is an important aspect of improving interactions between patients and physicians, research has found that surpassing the appropriate degree of accommodation can be viewed negatively by patients with disabilities (Duggan, Bradshaw, Swergold, & Altman, 2011). In observing medical students' interactions with patients with disabilities, Duggan et al. (2011) found that "subtleties in the duration, range, or context of otherwise positive, rapport-building behaviors can have negative implications" (p. 28), which may be perceived as patronizing by patients. The phenomenon of overaccommodation has also been reported in the customer service context (Ryan, Anas, & Gruneir, 2006) and between speakers of different languages (Platt & Weber, 1984).

The extent to which high levels of accommodation are viewed as negative or positive appears to depend on the context. For instance, Speer, Giles, and Denes (2013) found that overaccommodative behaviors between stepparents and stepchildren were viewed more favorably than underaccommodative behaviors. This may be because overaccommodation in this context demonstrates a welcome attempt by the stepparent to accommodate the needs of the stepchild. Thus, overaccommodation appears to be highly context dependent.

The effects of overaccommodation have, therefore, been found in a variety of interpersonal contexts. In his work on accommodation in policing, Giles has noted that the problem of overaccommodation may also apply:

> . . . obviously accommodative behavior in some situations might be construed as overaccommodating and, indeed not conducive to effective outcomes, breeding perhaps complacency and perceived vulnerability (Springer, 1994). The fine line of detecting cues to know when to accommodate and "code-switch" to another more controlling and assertive response is an important communicative ability. (Giles et al., 2006, p. 26)

Although Giles et al. (2006) have speculated about the potential effects of overaccommodation by police, these effects have yet to be fully investigated.

THE CURRENT STUDY

Using a randomized experimental design, this study examines the effects of procedural justice and overaccommodation on both encounter-specific attitudes toward an officer in a simulated traffic stop video and more general attitudes toward police. The experiment includes three conditions: a control condition, a procedural justice condition, and an overaccommodation condition. Consistent with previous research (Mazerolle et al., 2013; Sahin, 2014), the three following hypotheses are each tested at two levels: one that focuses on encounter-specific outcomes and one that focuses on more general outcomes. For instance, the encounter-specific measure of trust focuses on the level of trust in the officer depicted in the video, whereas the general measure of trust focuses on the police more broadly. The

hypotheses tested in the current study are based on theory and research from both procedural justice (e.g., Mazerolle et al., 2013; Sahin, 2014; Tyler, 2006; Tyler & Huo, 2002) and CAT (e.g., Giles et al., 2006; Giles, Willemyns, et al., 2007; Giles & Gasiorek, 2013).

Hypothesis 1: Participants exposed to the control condition will report lower levels of trust in police, willingness to cooperate with police, and obligation to obey police than those exposed to the procedural justice and overaccommodation conditions.

Hypothesis 2: Participants who are exposed to the procedural justice condition will report higher levels of trust in police, willingness to cooperate with police, and obligation to obey police than those exposed to the control and overaccommodation conditions.

Hypothesis 3: Participants who are exposed to the overaccommodation condition will report lower levels of trust in police, willingness to cooperate with police, and obligation to obey police than those exposed to the procedural justice condition, but higher levels of these measures than those exposed to the control condition.

The following section outlines the methodology used to test these hypotheses.

METHOD

PARTICIPANTS

Participants were undergraduate college students in introductory criminology and criminal justice classes at American University in Washington, D.C. Participants received credit toward their class participation grade for participating in the study, which involved watching a brief video online and then completing a survey immediately afterward. In total, 193 students participated between December 2014 and February 2015, though only 179 provided sufficient data for use in the multivariate analyses that follow.[4] The 179 participants included 56 men (31.3%) and 123 women (68.7%) of whom 125 (69.8%) were White and 54 (30.2%) were non-White (28.3%). Most participants were currently first-year students (68.2%), followed by sophomores (18.4%), juniors (8.9%), and seniors (4.5%).

PROCEDURE

After participants consented (online) to participate in the study, they were randomly assigned to watch one of the three brief videos ranging in length from 51 s to 1 min and 48 s. These videos, which depicted a police traffic stop resulting from a speeding violation, constitute the treatment in this study. Each video featured one of the three experimental conditions. After watching the randomly assigned video, respondents were invited to answer questions related to what they observed in the video, as well as more general questions about their attitudes toward law enforcement. All questions used Likert-type response options ranging from 1 to 5, with 1 indicating *strongly disagree* and 5 indicating *strongly agree.* Participants were also asked two open-ended questions that allowed them to share their thoughts about the video they watched and to provide feedback about the survey. These open-ended questions were deemed important because of their potential ability to clarify responses by participants and to improve the methodology used in future research. Participants were also asked basic demographic questions. Following the completion of the survey, participants were debriefed about the study's purpose and directed to resources on procedural justice, should they be interested in learning more.

Three separate videos were developed to represent the three experimental conditions: control, procedural justice, and overaccommodation. Each video depicts a traffic stop in which a police officer has stopped a driver for speeding. The video footage is shot from the perspective of a police body camera, thus the driver is shown, but not the officer. Both participants are actors, with the role of police officer played by a researcher with previous experience working as a police officer. The driver in each video is a White male teenager whose behavior does not vary across the experimental conditions. Only the officer's behavior varies. In each video, the officer approaches a stopped vehicle and obtains the driver's license and registration. For the sake of brevity, the video omits the officer returning to his vehicle and simply cuts to the officer issuing a speeding ticket. The first video represents the control condition, in which the officer does not rely on any elements of procedural justice or accommodation. It is a "no-frills" dialogue in which the officer merely obtains the required documentation, issues the ticket, and tells the driver he is free to go. The officer does not greet the driver when he approaches the vehicle; instead, he merely says, "license and registration." The control video lasts for 51 s.

The second video represents the procedural justice condition, in which the officer's script from the control condition is modified to include key elements of procedural justice, including dignity/respect, fairness/neutrality, and citizen participation. The script for this video was based in part upon the sample script provided to officers in Mazerolle et al.'s (2013) randomized field trial based on actual traffic stops by police in Queensland, Australia. In contrast to the control condition, the officer introduces himself to the driver when he approaches the vehicle ("Good morning sir, my name is Officer Smith"), explains the reason for the stop, and respectfully asks for the driver's documents ("May I have your license and registration, please?"). The procedural justice video lasts for 1 min and 32 s.

The third video represents the overaccommodation condition, in which the officer's script from the procedural justice condition is further modified to include key elements of overaccommodation. In this context, therefore, overaccommodation consists of intensifying each of the three elements of procedurally just interactions: respectful and polite treatment, neutrality of decision-making processes, and citizen voice. This was accomplished in the overaccommodation condition by incorporating principles from linguistic politeness theory (P. Brown & Levinson, 1987).[5] More specifically, the overaccommodation condition included an in-group form of address ("Hey man"), thanking and apologizing to the driver along with the use of intensifiers (e.g., "Thanks a lot" and "I'm really sorry"), minimizing the imposition on the driver's time, and conveying reluctance to have made the traffic stop. The overaccommodation condition depicts an officer who speaks to the driver in a casual or informal manner without invoking the officer's formal authority ("If it's ok with you, why don't you just give me your license and registration?"). The overaccommodation video lasts for 1 min and 48 s.

MEASURES

The questionnaire contained items intended to measure three types of outcomes: trust, willingness to cooperate, and obligation to obey. Each outcome type was measured at two levels: general and encounter specific. The general outcomes focused on police broadly, whereas the encounter-specific outcomes focused on the police officer in the video. The study, therefore, focused on six primary outcomes that resulted from cross-classifying two

levels of outcomes (general and encounter specific) with three types of outcomes (trust and confidence, obligation to obey, and willingness to cooperate). Each outcome was treated as a latent variable and measured using three indicators. Confirmatory factor analysis (CFA) was used to estimate measurement models linking the latent variables with the indicators thought to reflect the associated underlying concepts. Structural equation modeling methods were used to estimate these measurement models at the same time as the structural models to be discussed shortly. Table 1 lists the 18 indicators—three for each of the six latent outcomes—together with the mean of each indicator. In addition, Table 1 lists the factor loadings summarizing the effects of the latent outcome measures on the indicators associated with each one.[6] The loadings range from a low of .775 to a high of .941, with a mean of .869. These uniformly high loadings suggest that the indicators are strongly associated with the latent outcomes they are intended to reflect.

MODEL ESTIMATION

The three experimental groups represent the control, procedural justice, and overaccommodation conditions. The principal estimation task is estimating the effect of dummy variables representing each experimental condition on the six outcome measures. Because including all three dummy variables in the model simultaneously would introduce perfect multicollinearity, the model for each outcome must be estimated at least twice, excluding a different group dummy variable each time, to examine different contrasts between experimental conditions.

Balance tests were conducted to ensure that the randomization procedure was effective in generating balanced groups that do not exhibit significant differences in meaningful covariates that are thought to be associated with the outcomes. Given the findings from previous studies, which highlight the importance of age, sex, and race, balance tests were conducted for all three variables (see Engel, 2005; Hurst & Frank 2000; Jesilow, Meyer, & Namazzi, 1995; Taylor, Turner, Esbensen, & Winfree, 2001; Tuch & Weitzer, 1997; Webb & Marshall, 1995). Age is measured with a proxy variable that captured the respondent's year in school (1 = *freshman*, 4 = *senior*). Sex is coded so that 1 = male and 0 = female. Race is coded so that 1 = White and 0 = non-White or multiracial. We carried out balance tests for all three variables to check for group differences across the treatment conditions. One-way ANOVAs revealed no statistically significant differences between groups for year in school or sex. However, the results revealed significant racial differences across groups ($F = 5.75$, $p < .05$). The proportion of Whites in the procedural justice group is much lower (54.1%) than in the other two groups (76.7% in the control group and 79.3% in the overaccommodation group). These differences constitute a form of randomization failure that must be controlled for statistically in the multivariate models that follow.[7]

Given the results of the balance tests, the final models to be estimated must include race (% White) as a covariate in addition to the two dummy variables representing group membership (a third dummy variable represents the reference category and is therefore excluded). The inclusion of race as a covariate is meant to control for the unequal distribution of race across the experimental conditions. Year in school and sex are also included as covariates in each model to account for the possibility that minor demographic differences between groups may influence the treatment estimates. Separate structural models are estimated to test the effects of the covariates on each of the six latent outcome variables. Because the

TABLE 1: Indicator Means and CFA Factor Loadings for Six Outcomes

Outcome level	Outcome type	Indicator	M	λ
Encounter-specific outcomes	Willingness to cooperate	Q43-2. After speaking with this officer, would you be more likely to call the police to report a crime	3.70	.872
		Q43-3. After speaking with this officer, would you be more likely to help the police find a suspect by giving them information	3.78	.895
		Q43-4. After speaking with this officer, would you be more likely to report suspicious activity	3.69	.888
	Obligation to obey	Q41-6. If you were the driver in the video, would you feel compelled to do what the officer said	4.36	.869
		Q43-1. If you were the driver in the video, would you feel compelled to follow the law	4.08	.867
		Q43-5. If you were the driver in the video, would you accept the officer's decision to give you a ticket, even if you didn't agree with it	4.18	.775
	Trust and confidence	Q41-3. If you were the driver in the video, would you trust the officer	4.24	.941
		Q41-5. If you were the driver in the video, would you believe that the officer was doing the right thing	4.21	.850
		Q41-7. If you were the driver in the video, would you have confidence in the officer	4.15	.870
General outcomes	Willingness to cooperate	Q47-8. I would help the police if asked	4.00	.884
		Q47-9. I would call the police to report a crime	4.15	.835
		Q47-11. I would report dangerous activities to police	4.16	.898
	Obligation to obey	Q47-13. People should follow the law, even if they don't agree with it	3.70	.780
		Q47-10. People should do what the police tell them to do	3.78	.830
		Q47-7. I accept decisions made by police	3.50	.885
	Trust and confidence	Q47-1. The police are trustworthy	3.44	.913
		Q47-6. I have confidence in police	3.62	.917
		Q47-5. The police do their job well	3.36	.879

Note. 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. CFA = confirmatory factor analysis.

indicators used to measure each latent outcome variable are ordinal variables ranging in value from 1 to 5, the models are estimated using a robust weighted least squares estimator (WLSMV). Monte Carlo simulation research has shown that the WLSMV estimator performs well for models with categorical indicators (DiStefano & Morgan, 2014; Flora & Curran, 2004; Muthén, Du Toit, & Spisic, 1997).

The sample used in this study is somewhat small relative to the complexity of the models being tested. Asparouhov and Muthén (2010) noted that "WLSMV methods are based on

TABLE 2:   Regression Results for All Models (WLSMV Estimates)

Outcome level	Outcome type	Procedural justice (1) vs. control (0)	Overaccommodation (1) vs. control (0)	Procedural justice (1) vs. overaccommodation (0)
Encounter-specific outcomes	Willingness to cooperate	.162	.034	.129
	Obligation to obey	.214*	.077	.137
	Trust and confidence	.297*	.120	.181
General outcomes	Willingness to cooperate	.096	−.029	.128
	Obligation to obey	.088	−.013	.102
	Trust and confidence	−.048	−.061	.013

Note. All coefficients are fully standardized. WLSMV = weighted least squares estimator.
*$p < .05$.

and designed for large sample size and have no guarantee to work well in small sample size" (p. 31). For that reason, all models were also estimated with a Bayesian estimator in Mplus using the Markov Chain Monte Carlo algorithm. Simulation research has shown that this estimator has good small-sample performance relative to other estimation procedures, particularly for CFA models with ordinal data (Asparouhov & Muthén, 2010; Liang & Yang, 2014). An additional benefit of the Bayesian approach is that it is a full-information estimator; simulation research shows that it does a better job accounting for missing data than WLSMV, which relies on pairwise estimation (Asparouhov & Muthén, 2010). The use of both estimation methods allows for a more complete understanding of the models being estimated here.

RESULTS

Table 2 contains standardized regression coefficients for all the models estimated using WLSMV based on three contrasts: procedural justice (1) versus control (0), overaccommodation (1) versus control (0), and procedural justice (1) versus overaccommodation (0). All regression models include the three covariates included in the balance tests (year in school, sex, and race) to account for any differences across groups on these three quantities.[8]

The results for the encounter-specific outcomes shown in Table 2 reveal that participants exposed to the procedural justice condition feel more obligated to obey the law and legal authorities (β = .214, p = .044), and have more trust and confidence in the police (β = .297, p = .004) relative to participants exposed to the control condition. No significant differences were observed for participants exposed to the overaccommodation condition relative to those exposed to the control condition. No significant differences in encounter-specific trust and confidence (β = .181, p = .079), willingness to cooperate (β = .129, p = .203), or obligation to obey (β = .137, p = .183) were noted for participants exposed to the procedural justice condition relative to the overaccommodation condition. The results for the general outcomes shown in Table 2 reveal no significant differences between any of the experimental groups on any of the latent outcomes.

Table 3 contains standardized regression coefficients based on Bayesian estimates for all models based on the same three contrasts shown in Table 2. At the encounter-specific level, participants exposed to the procedural justice condition are significantly more willing to

TABLE 3: Regression Results for All Models (Bayesian Estimates)

Outcome level	Outcome type	Procedural justice (1) vs. control (0)	Overaccommodation (1) vs. control (0)	Procedural justice (1) vs. overaccommodation (0)
Encounter-specific outcomes	Willingness to cooperate	.147*	.031	.119
	Obligation to obey	.213*	.101	.138
	Trust and confidence	.249*	.129	.161*
General outcomes	Willingness to cooperate	.072	−.035	.113
	Obligation to obey	.090	−.015	.081
	Trust and confidence	−.018	−.043	−.003

Note. All coefficients are fully standardized.
*$p < .05$.

cooperate with police relative to people exposed to the control condition ($\beta = .147$, $p = .046$). Note that in the WLSMV model, this result was not statistically significant ($\beta = .162$, $p = .091$). Consistent with the WLSMV results, participants exposed to the procedural justice condition also indicated a greater feeling of obligation to obey ($\beta = .213$, $p = .009$), and more trust and confidence in the police ($\beta = .249$, $p = .002$) relative to people exposed to the control condition.

In the WLSMV models, no significant differences across any of the encounter-specific outcomes were observed for people exposed to the overaccommodation condition relative to those exposed to the control condition. The same finding emerged from the models estimated using Bayesian methods. In the WLSMV models, people exposed to the procedural justice condition reported having similar feelings of trust and confidence ($\beta = .181$, $p = .079$), willingness to cooperate ($\beta = .129$, $p = .203$), and obligation to obey ($\beta = .137$, $p = .183$) as people exposed to the overaccommodation condition. In the Bayesian models, the effect of the procedural justice condition on trust and confidence (relative to the overaccommodation condition) emerged as statistically significant ($\beta = .161$, $p = .035$), but the effects on willingness to cooperate ($\beta = .119$, $p = .088$) and obligation to obey ($\beta = .138$, $p = .071$) remained non-significant. Consistent with Table 2, the results for the general outcomes shown in Table 3 reveal no significant differences between any of the experimental groups on any of the six latent outcome measures.

DISCUSSION

Drawing on two rich bodies of theory, this article tested the effects of procedural justice and overaccommodation on public attitudes toward police. The study relied on a randomized experimental design to contrast the effects of three treatment conditions (control, procedural justice, and overaccommodation) on participants' trust, willingness to cooperate with, and obligation to obey the police at two levels of abstraction: encounter-specific and general. The major treatment effects discovered in this study occurred among the encounter-specific outcomes. The treatments had no statistically significant effects across-the-board on the general outcomes, a finding that was consistent across two different estimation methods. Among the encounter-specific outcomes, the most robust treatment effects were observed for the contrast between participants exposed to the procedural justice condition

and those exposed to the control condition. Participants exposed to the procedural justice condition reported greater trust, willingness to cooperate with, and obligation to obey the police relative to controls.

The contrast between the overaccommodation condition and the control condition revealed no significant effects across two estimation methods. Using overaccommodative communication styles does not appear to generate better outcomes (at least of the type measured here) than the control condition, which might be thought of as an implicit form of underaccommodation.[9] This finding is especially noteworthy given that in the control condition, the officer communicated in a brusque (though not overtly rude) manner. These findings suggest the possibility that too much accommodation may be as detrimental as too little.

The contrast between the procedural justice and overaccommodation conditions resulted in more ambiguous findings. The WLSMV model revealed no significant differences across groups. In the Bayesian model, however, trust and confidence emerged as significant. Based on the findings from the models estimated using Bayesian methods, procedural justice appears to outperform overaccommodation in stimulating trust and confidence, though this conclusion must be tempered by the somewhat inconsistent findings from the two estimation methods. Furthermore, two of the three encounter-specific outcomes were not statistically significant, even in the Bayesian model where the effects appear more pronounced. At the same time, all the coefficients were positive and of sufficient magnitude to raise questions about the extent to which some of the coefficients would have emerged as statistically significant in a study with a larger sample size and greater statistical power.

The results reported here are partially consistent with those from a previous study on the effects of procedural justice (Sahin, 2014). In a randomized trial conducted in Adana, Turkey, Sahin (2014) found that a procedural justice intervention improved three of four measures of encounter-specific attitudes toward police, and two of four measures of general attitudes toward police. However, most of the outcomes examined in Sahin's (2014) study were different than the outcomes examined here. Trust was the only outcome used in both studies and the findings were similar. In both studies, the procedural justice intervention (relative to a control condition) had a significant positive effect on encounter-specific trust and a non-significant effect on a more general measure of trust in the police.[10] The findings reported in this study are also partially consistent with the literature on overaccommodation, which has found a decrease in approval when accommodation surpasses an appropriate level. Our findings indicate that procedural justice outperforms overaccommodation in generating trust and confidence, but not obligation or cooperation.

This is the first randomized experiment to test the effects of overaccommodation in a policing setting. If we loosely conceptualize procedural justice as a moderate level of accommodation that resides on a continuum between the control condition (which might be thought of as a form of underaccommodation) and the overaccommodation condition, then the findings reported here are consistent with the idea that the effects of accommodation may be non-linear (see Giles & Smith, 1979). Procedural justice appears to generate more socially beneficial outcomes (among those measured here) than either the control condition or overaccommodation.

One possible explanation for this finding is that the overaccommodation condition was more informal than the procedural justice condition, which may have conveyed a lower level of authority or professionalism. When it comes to accommodation, perhaps a little goes a long way. Although people want to see the softer, more human side of police officers,

they may still expect the police to behave in ways they view as authoritative and professional. If valid, this expectation suggests that people prefer greater conversational distance when talking with authority figures such as police than what occurred during the overaccommodation condition in this study. This is speculative, but responses to the open-ended questions are consistent with this possibility. For instance, in response to the overaccommodation condition, one participant noted " . . . I felt that the officer was polite and respectful, but did not sound as professional or confidant (sic) as I would want." Even in the procedural justice condition, one respondent commented that "the officer was almost too nice to the driver. I would prefer interactions with police to be less intimidating but at the same time it is important they maintain a certain presence." Taken together, the evidence suggests the need to calibrate the level of accommodation in procedural justice interventions so they convey an appropriate mix of politeness, respect, and fairness on one hand, and professionalism and authority on the other hand.

Although there are considerable theoretical overlaps between procedural justice and accommodation, there are also important differences that are worthy of consideration. The extent to which procedures and processes are viewed as fair is integral to the definition of procedural justice but is absent from CAT. In addition, whereas the interactional aspects of procedural justice consist of a handful of key elements (such as respect, neutrality, and voice), accommodation encompasses a much wider set of verbal and behavioral elements. Accommodation explicitly includes respectful treatment and citizen voice in the work of Giles and his colleagues (2006). However, it also includes many other specific communicative features, including non-verbal behavior, speech rate, and accent. Studies based on CAT, therefore, often focus on more detailed or nuanced aspects of a conversation than studies based on procedural justice.

Future studies should continue to explore the relationship between communication accommodation and procedural justice and how insights from each tradition of theory and research can complement the other. CAT incorporates a much broader domain of communication dynamics (including both verbal and non-verbal phenomena) than procedural justice theory. At the same time, procedural justice theory focuses more heavily on interactions between authority figures and subordinates and the extent to which the latter views the former as wielding their authority in a just manner. One potentially fruitful line of research might expand on analyses similar to those carried out by Dixon et al. (2008), which systematically examined the nature and quality of communication by both parties during police–citizen encounters. Expanding this line of research to include insights from the scholarship on procedural justice and legitimacy could shed new light on how each party in a police–citizen encounter responds to the style and content of communications by the other. Another potentially fruitful line of research might involve expanding field studies of procedural justice to account for a wider range of communication accommodation phenomena, including non-verbal dynamics (body position, facial expressions, etc.). In short, both bodies of research could benefit from incorporating insights from the other.

This study contains a number of strengths and weaknesses that ought to be kept in mind when reflecting on the findings. On the positive side, the study relied on a randomized experimental design, thus allowing for more confident inferences than studies that rely on correlational designs. It also relied on structural equation modeling techniques that accounted for measurement error in the six composite outcome measures. Additionally, this

study presented findings based on two different statistical estimators, each of which offers unique benefits.

In spite of these strengths, the study also has some limitations. First, as with many randomized experiments, external validity is likely not as strong as internal validity. External validity issues may arise as a result of the narrow range of students (undergraduate students at a private university) recruited to participate in the study. Unfortunately, we simply do not know to what extent the findings from this sample can be generalized to a wider population. Thus, future research should seek to examine these issues using sampling strategies that allow for greater generalization. Second, because of the small sample size and the small number of non-White respondents, we were unable to explore race and ethnicity effects in greater depth. Third, our randomization procedure, though fully automated and immune to manipulation, failed to generate racially balanced groups. Fortunately, we were able to control statistically for the influence of race, but the study would have been stronger if the randomization procedure had generated fully balanced groups from the outset. Fourth, though the study likely had sufficient statistical power to detect medium- or large-sized effects, it may not have had sufficient power to detect small effects (cf. Cohen, 1992). Some of the coefficients that did not emerge as statistically significant may represent small effects that we were unable to detect due to sample size and statistical power issues. Finally, relative to randomized field trials, which take place in more realistic community settings, the mock traffic stop in this study could be viewed as somewhat artificial. In spite of these challenges, the study still makes some important contributions to the literature on procedural justice and communication accommodation.

Why did the treatments influence the encounter-specific outcomes but not the more general attitudinal outcomes? The most obvious possibility is that observing a brief interaction between a police officer and a citizen may not be sufficient to influence people's more general attitudes about the police. In this way, our findings differ from those of Sahin (2014), who found that procedural justice interventions did influence some general perceptions of police but not others. According to Sahin, participants in his Turkish study explained that their perceptions of police were a result of their repeated interactions with police, not just one isolated encounter. Thus, one brief interaction may not be sufficient to alter impressions that had formed over a long time. Because the present study involved participants observing a traffic stop that involved someone other than themselves, there is also some possibility that participants may have found it less salient (and perhaps more artificial) than if they had been stopped by police themselves. Judgments about procedural justice and accommodation contain an emotional or affective component that may not be triggered when observing a stranger during a traffic stop. If this is true, a field trial may produce stronger effects than a laboratory-style experiment such as the present one.

Another consideration is that the videotaped traffic stop scenarios that formed the basis for this study involved only a truncated continuum of stimuli that ranged from no or low valence in the control condition to positive valence in the other two conditions. Importantly, none of the conditions examined in this study featured a negative valence. In the control condition, the officer's interaction with the driver was brief, and perhaps brusque. While it contained no procedural niceties, it also did not feature any overtly negative or unjust behaviors on the part of the officer. Thus, an important question left unanswered in this study is whether overtly negative behaviors on the part of the officer (as opposed to the mere absence of positive behaviors) may have generated stronger effects, particularly on

general attitudes, than positive behaviors. Put differently, treating people poorly may produce more powerful effects on general attitudes than treating them well.

There is some precedent for this line of inquiry in the literature on public attitudes toward police. Based on research in Chicago, Skogan (2006) reports that "the police may get essentially no credit for delivering professional service, while bad experiences can deeply influence peoples' views of their performance and even legitimacy" (p. 99). He estimates that the impact of having a bad experience with police "is four to fourteen times as great as that of having a positive experience" (p. 100). If valid, this asymmetry between the effects of positive and negative interactions has important policy implications for police. It suggests that police may have difficulty recovering from negative interactions by merely investing in or promoting positive interactions. Bradford, Jonathan, and Stanko (2009) tested Skogan's findings using more refined outcome measures. They found that whereas unsatisfactory contacts do result in negative evaluations of police, "positively received contacts can improve perceptions of fairness and community engagement" (Bradford et al., 2009, p. 20). Thus, the scientific literature on the differential effects of positive and negative interactions between police and citizens appears not to have yet been resolved. A randomized experiment that compares citizen reactions with positive and negative interactions could help resolve the debate. Although this literature is informative, much remains to be learned.

CONCLUSION

Based on a randomized experiment, this study found that the way a police officer talks to a citizen influences the extent to which individuals have trust and confidence in the officer, express a willingness to cooperate with the officer, and report an obligation to obey directives given by the officer. Procedural justice has more powerful effects on these outcomes than overaccommodation. Although this study revealed that procedural justice generated strong effects on encounter-specific attitudes, it did not find any effects on more general attitudes toward police. In this way, the findings from this study are consistent with a small body of evidence from randomized trials, which find that procedural justice influences encounter-specific attitudes toward police. Our findings are less consistent with existing research on the effects of procedural justice on more general attitudes toward police. Further research is needed to understand in greater detail the influence of procedural justice experiences on more general attitudes.

This study also contributes to a greater understanding of the overlaps between CAT from the field of linguistics and procedural justice theory. Although Giles, Hajek, et al. (2007) have discussed the similarities between the two theories, this is the first empirical study that invokes the two of them together. Clarifying the roles of communication accommodation and procedural justice in interactions between authority figures and subordinates could have powerful implications for understanding key criminal justice outcomes such as cooperation, compliance, and defiance. More generally, thinking carefully about how theory and research from linguistics and criminal justice can inform the work of both fields could result in novel avenues for theory and research.

Finally, this study also has important implications for policy and practice. The relationships between police and communities are a significant public policy issue in many nations. Much of the debate over how to address this issue centers on procedural justice and how to improve the way police interact with the public. Research on procedural justice and

communication accommodation suggests that the way police talk to people is important. Consistent with that research, the findings from this study suggest that people's judgments of encounters between police and the public are heavily influenced by how police communicate during those encounters. Encouraging police to talk to people in a fair and respectful manner would seem to be an important step.

NOTES

1. The scholarly literature on police legitimacy is currently in a state of intense debate over the meaning and measurement of legitimacy. Under the classic approach articulated by Tyler, legitimacy is comprised primarily of obligation to obey the police, as well as trust and confidence in the police (e.g., Sunshine & Tyler, 2003; Tyler, 2006; Tyler & Huo, 2002). In some treatments of legitimacy, Tyler and his colleagues also treat affective feelings toward police or the law and cynicism about the law as components of legitimacy. Moreover, in all of Tyler's work, procedural justice is viewed as an antecedent of legitimacy. Several recent works challenge the dominant conceptualization of police legitimacy on conceptual, theoretical, and empirical grounds (e.g., Jackson, Bradford, Kuha, & Hough, 2014; Johnson, Maguire, & Kuhns, 2014; Tankebe, 2013). In fact, Tankebe's reconceptualization of legitimacy treats procedural justice as a component of legitimacy rather than an antecedent. Given the current lack of consensus in the literature about the meaning and measurement of police legitimacy, the present study does not seek to measure legitimacy. Although several of the measures used in this study (such as obligation to obey) are conceptualized by some authors as components of legitimacy, no attempt is made here to treat these constructs as measures of legitimacy.

2. Encounter-specific outcomes are those that are concerned with a specific encounter between an officer and a citizen. General outcomes are not associated with a specific individual or encounter, but are instead more global or general in nature. For instance, an encounter-specific outcome may focus on perceptions of the extent to which an officer behaved fairly in a specific encounter, whereas a general outcome may focus on the extent to which the police as an institution behave fairly.

3. In the original questionnaire used by Giles et al. (2006), participants were instructed to think of accommodation as "how well do you think [the police] listen to people, take their views into account, and want to understand their needs and unique situations" (p. 254). For additional questionnaire items, see Giles et al. (2006).

4. Based on preliminary power analyses, we estimated that a minimum sample size of 159 would be necessary to detect a medium-sized effect ($f = .25$) with a power of .80 and an α level of .05 (Cohen, 1992). Thus, our achieved sample size of 179 is likely sufficient for detecting medium and large effects, but insufficient to detect small effects.

5. Giles et al. (2007) draw parallels between the principles underlying politeness theory and CAT and discuss how many of the strategies of politeness theory are essentially forms of accommodation. For example, police may give "well-articulated explanations warranting any actions" (Giles, Willemyns, et al., 2007, p. 142), a strategy which is derived from politeness theory but is also accommodative. Politeness theory, therefore, provides a useful linguistic framework for operationalizing the details of the overaccommodation condition.

6. Note that the experimental design used in this study features three groups. To obtain estimates contrasting the resulting pairs of groups, each model must be estimated twice. Because the measurement portions of the model are estimated at the same time as the structural portions, this approach results in two sets of parameter estimates for each of the six models. All factor loadings and factor correlations reported in this article come from models in which the control group is the reference category. Estimates from models in which the other two groups serve as the reference category are virtually identical and result in no substantively meaningful differences.

7. Respondents in this study were assigned to groups based on a randomization algorithm that was not susceptible to any type of intentional or unintentional human manipulation. Therefore, we have no ready explanation for these racial differences in group composition. Randomization is premised on the law of large numbers and sometimes fails in small samples. The most likely possibility in this case is that the racial differences emerged due to the combination of a small sample and a relatively low base rate of non-Whites.

8. Although the balance tests presented earlier revealed that only one of the three variables (race) had statistically significant differences across groups, for the sake of caution, all three variables (year in school, sex, and race) were included as covariates in the regression models. Because these variables were only included as covariates to account for differences between groups rather than for substantive reasons, the coefficients are not reported. Note that consistent with the results of the balance tests reported earlier, percent White had significant effects in several of the models, whereas year in school and sex had no significant effects in any of the models.

9. Underaccommodation involves a relative absence of accommodative adjustments in the way one person talks to another (Giles & Gasiorek, 2013). Although our control condition was not purposely intended to measure underaccommodation, the absence of procedural niceties or overt forms of politeness is consistent with the conceptual meaning of underaccommodation.

10. Note that our findings are not directly comparable with those of Mazerolle, Antrobus, Bennett, and Tyler (2013) because their study did not test the direct effects of the procedural justice intervention on outcomes. Instead, it tested the

direct effect of the intervention on people's encounter-specific perceptions of procedural justice, and then, in turn, estimated the effects of these perceptions on several outcome measures.

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