AMERICAN PSYCHOLOGICAL ASSOCIATION

Psychology, Public Policy, and Law

© 2021 American Psychological Association
ISSN: 1076-8971

2022, Vol. 28, No. 1, 92–107
https://doi.org/10.1037/law0000328

Measuring Youths' Perceptions of Police: Evidence From the Crossroads Study

Adam D. Fine[1], Jordan Beardslee[2], Ryan Mays[1], Paul J. Frick[3], Laurence Steinberg[4, 5], and Elizabeth Cauffman[2]

[1] School of Criminology and Criminal Justice, Arizona State University Downtown Phoenix Campus
[2] Department of Psychological Science, University of California, Irvine
[3] Department of Psychology, Louisiana State University
[4] Department of Psychology, Temple University
[5] Department of Psychology, King Abdulaziz University

The literature on perceptions of police is growing, yet the enthusiasm is outpacing methodological rigor. This study (a) examined the factor structure of items assessing procedural justice and legitimacy, (b) tested whether the factors were uniquely associated with youth self-reported offending (SRO), and (c) identified whether effects on subsequent SRO operated through legitimacy. Using data derived from the 1,216 youth in the Crossroads Study, as well as supplemental models with Pathways to Desistance data, factor analyses established a factor structure, negative binomial regressions examined associations with SRO, and indirect effects analysis within a structural equation model framework identified whether associations on SRO operated through legitimacy. A five-factor solution emerged: Voice, Neutrality/Impartiality, Distributive Justice/Bias, Respect, and Legitimacy. In the adjusted model, only Distributive Justice/Bias and Legitimacy were directly associated with concurrent SRO. However, all procedural justice scales had indirect effects on subsequent offending through legitimacy. Implications for methodology and procedural justice theory are discussed.

Keywords: juvenile justice, legal socialization, legitimacy, policing, procedural justice

Supplemental materials: https://doi.org/10.1037/law0000328.supp

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Tyler's process-based theory of procedural justice (Tyler, 2006, 2017) suggests that perceptions of procedural justice impact perceptions of institutional legitimacy, which, in turn, foster compliance and cooperation with the police. Indeed, both individual studies (Fagan & Tyler, 2005; Nivette et al., 2019; Solomon, 2019; Tyler, 2006; Tyler & Huo, 2002) and meta-analytic evidence (Bolger & Walters, 2019; Walters & Bolger, 2018) indicate that fair, just, unbiased, and respectful treatment increases the likelihood that citizens perceive law enforcement to be legitimate, and legitimacy in turn enhances compliance with officer directives, acceptance of their decisions, and obligation to obey the law. These constructs are often distilled down to procedural justice on the one hand and overall views of legitimacy on the other, yet the constructs themselves remain surprisingly nebulous and poorly defined (Jackson, 2018; Posch et al., 2020).

Research on police procedural justice and legitimacy has surged in both the United States and internationally (see Fox et al., 2018; Jackson & Bradford, 2019; Mazerolle et al., 2019; Nivette et al., 2019; Nix et al., 2020; Trinkner, 2019; Tyler & Trinkner, 2018). In large part, the focus is driven by findings that procedural justice appears to enhance legitimacy, which in turn promotes voluntary compliance with the law, cooperation with the police, and crime reporting (Bolger & Walters, 2019; Tyler, 2006; 2017; Tyler & Huo, 2002). Yet despite promising implications for both understanding compliance and improving policing (Nagin & Telep, 2017), an unfortunate reality is that the definition and operationalization of key constructs—including "procedural justice" and "legitimacy"—vary between and often even within studies. Although this issue was recognized over a decade ago (Gau, 2011; Reisig et al., 2007), few studies have taken up this charge and it continues to be the case that "enthusiasm for testing procedural justice theory is outpacing methodological rigor and theoretical clarity" (Jackson, 2018, p. 145). Using data from the Crossroads study, including more than 1,200 first time adolescent offenders from three distinct regions of the United States, and a replication involving the Pathways to Desistance study, the current study helps fill these measurement gaps in the literature.

This article was published Online First October 14, 2021.

Adam D. Fine https://orcid.org/0000-0002-7029-0731

The Crossroads Study is supported by funding from the John D. and Catherine T. MacArthur Foundation, the Office of Juvenile Justice and Delinquency Prevention, the Fudge Family Foundation, the William T. Grant Foundation, and the County of Orange. We are grateful to the many individuals responsible for the data collection and preparation.

Correspondence concerning this article should be addressed to Adam D. Fine, School of Criminology and Criminal Justice, Arizona State University Downtown Phoenix Campus, 411 North Central Avenue, Suite 633, Phoenix, AZ 85004, United States. Email: adfine@asu.edu

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Procedural Justice

Police procedural justice is broadly defined as the fairness of treatment by police (Nivette et al., 2019, p. 71). Although most researchers would likely agree with that broad view, inconsistencies abound when measures attempt to be specific. Many researchers base their theoretical views of procedural justice on Tyler's (2017) model, which itself was based on Tyler and Blader's model (Blader & Tyler, 2003; see also Hamm et al., 2017; Trinkner, 2019). Tyler (2017) indicates that there are two dimensions, and each is composed of two elements. The first dimension pertains to treatment, and this is constructed of two elements: Do people believe that police treat people with dignity, courtesy, and respect; and do people believe that police motives are trustworthy and benevolent. The second dimension refers to how police make decisions, and this is constructed of two elements: voice (i.e., allowing members of the public to tell their side of the story), and neutrality (i.e., whether police "make decisions in ways that people regard as neutral, rule based, consistent, and absent of bias;" Tyler, 2017, p. 32).

In general, the field has largely followed Tyler's theoretical conceptualization of procedural justice. For instance, Bolger and Walters (2019) define procedural justice as "perceptions of police fairness, respect, and neutrality in their dealings with the public and the quality of police decision-making and treatment of citizens" (Bolger & Walters, 2019, p. 95), which incorporates these dimensions. As another example, Bradford (2011, p. 348) views procedural justice as "transparency, fair, equitable and respectful treatment, following correct procedure, and a feeling of control over the processes through which people interact with authorities." Altogether, a widely-held perspective is that procedural justice refers to fair, respectful, and unbiased treatment during encounters by the police and during their decision-making processes (Bradford et al., 2013; Kaiser & Reisig, 2019; Murphy et al., 2019), and it involves impartiality, respect, voice, and participation (Hamm et al., 2017).

The debate about theoretical perspectives yields similar inconsistencies surrounding actual measurement. For the last few decades, the field has typically relied on variations built upon Tyler's (1990) original measures of procedural justice that focus on the quality of interpersonal treatment and the quality of decision-making (see Bradford, 2011; Bradford et al., 2014; Gau, 2014; Mazerolle et al., 2012; Reisig et al., 2007). However, the comprehensive nature of the scales varies from study to study; some simply measure the quality of interpersonal treatment and/or the quality of decision-making, whereas others sometimes add measures of voice and/or impartiality (Augustyn, 2015; Augustyn & Ray, 2016; Fine et al., 2016, 2017; Fine & Cauffman, 2015; Gau, 2014; Hinds & Murphy, 2007; Reisig et al., 2007). Even among studies using the same datasets, the number and content of the items used to assess procedural justice vary. To further complicate matters, researchers have begun isolating particular aspects of procedural justice without comprehensively assessing previously measured or established dimensions. For instance, some have begun focusing on how much voice individuals are given during an encounter with police, and/or impartiality in decision-making, and/or trust, and/or honesty, and/or respect (see Walters & Bolger, 2018 for a review).

Legitimacy

Legitimacy is a foundational component of modern criminological research and public policy (Hamm, Trinkner, & Carr, 2017; Jackson & Gau, 2015). Grounded in Weber's (1978) classical principles, this begins with the premise that individuals have ideals and values about the appropriate purpose, scope, and behavior of the legal system (Jackson et al., 2013). Legitimacy reflects one's belief that the authority has power that is rightful, appropriate, and normatively justified (Jackson, 2018; Jackson & Gau, 2015; Tankebe et al., 2016). The consensus appears to be that legitimate authorities are those that individuals view as possessing appropriate and proper authority to enforce laws and maintain order (Bottoms & Tankebe, 2012; Mazerolle et al., 2019; McLean et al., 2019; Trinkner et al., 2019; Tyler, 2006).

Yet despite a general consensus that legitimacy is central to a well-functioning legal system (Bolger & Walters, 2019; Nagin & Telep, 2017; Tyler & Trinkner, 2018; Walters & Bolger, 2018), inconsistencies abound in theoretical views of the interrelations between procedural justice and legitimacy. Whereas some approaches consider procedural justice to be one factor of legitimacy (Tankebe, 2013), others view it as preceding legitimacy (Gau, 2011; Reisig, 2007). Tyler's process-based model (Blader & Tyler, 2003, 2006, 2017) typically takes the latter perspective and suggests that perceptions of procedural justice impact perceptions of legitimacy. In clarifying the contours of the debate, Trinkner (2019, p. 312) recently wrote that "nowhere in his writings does Tyler suggest that legitimacy is composed of lawfulness, procedural justice, distributive justice, and effectiveness. Rather these constructs are consistently described as possible sources—that is, potential antecedents—of legitimacy." In recent decades, a number of studies using a range of methodologies (e.g., Bolger & Walters, 2019; Mazerolle et al., 2012; MacCoun, 2005) in a variety of diverse contexts (e.g., Jonathan-Zamir & Weisburd, 2013; Wolfe et al., 2016; Zahnow et al., 2019) routinely find support for the process-based model; the more individuals perceive procedural justice, the more they then report legitimacy, and the more likely they are to then comply with the law. Importantly, legitimacy-driven cooperation and compliance are voluntary rather than compulsory, instrumental, or driven by fear (Trinkner, 2019; Tyler, 2006).

Yet even among studies that take the theoretical stance of the process-based models of policing and procedural justice, scholars have operationalized legitimacy in a variety of ways. Tyler (2017, p. 30) indicates that legitimacy is often labeled trust and confidence. In their discussion of normative versus empirical legitimacy, Jackson and Bradford (2019, p. 4) note that the abstract nature of institutional legitimacy renders measuring it difficult, and a strong consensus does not exist in the field (see also Posch et al., 2020; Tyler, 2006). However, Jackson and Bradford (2019, p. 4) provide a comprehensive way to operationalize empirical legitimacy "along two connected lines: 1. normative justifiability of power in the eyes of citizens (the right to rule): do citizens believe that the police as an institution is just, proper and appropriate? 2. recognition of rightful authority (the authority to govern): do citizens believe that police officers are entitled to be obeyed." In a somewhat-related view, Trinkner (2019, p. 311) and Posch and colleagues (2020) suggest that considering legitimacy reflects one's acceptance and belief that the authority figures have an

appropriate means to regulate behavior, it can be operationalized through acceptance of police authority.[1]

The Present Study

Nagin and Telep (2017) argued that procedural justice and legitimacy are critical because they advance values that are fundamental to society. However, in critiquing the field, they also wrote that, "Public policy, however, is not served by mistaken reliance on conclusions that are not sustained by the evidence" (Nagin & Telep, 2017, p. 23). Although their critique was largely focused on the limited amount of causal evidence, it is equally true that public policy is ill-served when science uses poor and inconsistent measurement. As Jackson and Bradford (2019) note, these measurement questions are far from just semantics; they enable us to make empirically informed policy recommendations. In effect, we focus on improving how researchers should measure the "evidence" on which theory and public policy relies (President's Task Force on 21st Century Policing, 2015).

This study uses data from the 1,216 male adolescent offenders in the Crossroads study to address three aims. The first aim was to better understand the underlying factor structure of the items tapping elements of procedural justice and legitimacy. To date, no studies have comprehensively examined the factor structure of the procedural justice and legitimacy items in Crossroads. Previous studies using other datasets have used confirmatory factor analyses to demonstrate what they consider to be constituent components of legitimacy (e.g., Sun et al., 2018), whereas others have used exploratory factor analyses to examine how legitimacy, procedural justice, and distributive fairness load within a given dataset (e.g., Reisig & Lloyd, 2009). In a commentary, Jackson and Bradford (2019) counseled future researchers from using top-down approaches. To that end, we split the Crossroad sample in half and conducted complementary factor analyses on the two halves: exploratory and confirmatory factor analyses. Considering factor analyses are good at modeling correlations between variables but are less adept at telling us what to label the identified constructs (Jackson & Bradford, 2019), for each of our expected dimensions as listed below in the Measures, we provide the extant research guiding our labeling strategy. We expected the items would load onto five factors: Voice, Neutrality/Impartiality, Distributive Justice/Bias, Respect, and Legitimacy.

Studies have indicated that within justice-involved youth samples, legitimacy is associated with self-reported offending (see Walters, 2018). However, contrary to expectations of the procedural justice framework, a study of 92 youth on probation failed to find that legitimacy mediates the association between procedural justice and self-reported offending (Penner et al., 2014). As such, the second aim was to examine to what extent each of the factors identified were associated with self-reported offending and to test an explicit theoretical model specifying that procedural justice's effect on offending would be mediated by perceptions of legitimacy using a longitudinal design. For this aim, we used a series of bivariate and multivariate models predicting offending over the 6 months since an adolescent's first arrest. Further, we tested the additional prediction that procedural justice would largely predict later offending through perceptions of legitimacy.

Finally, we replicated the models using data from the Pathways to Desistance study, a study of youth who were adjudicated or found guilty of serious offenses (Mulvey, 2013). Considering the remarkable rate at which researchers publish studies using the Pathways to Desistance sample, it is surprising that (a) to our knowledge no publicly accessible study has comprehensively examined the factor structure of the procedural justice and legitimacy items using the Pathways sample, and (b) inconsistency abounds in how researchers treat these items. Consequently, a supplemental set of models were run as a replication study to determine the extent to which the factor structure identified in the Crossroads study fits the data in the Pathways to Desistance study.

Method

Participants

Participants were 1,216 male youth from the Crossroads study (see Beardslee et al., 2019; Cauffman et al., 2021). Youth between the ages of 13 and 17 years of age (M_{age} = 15.29) were eligible if they had recently been arrested for the first time for low-to-moderate offenses (e.g., vandalism: 17.5%, theft: 16.7%, marijuana possession: 14.8%). Participant recruitment commenced in July 2011, and there were three study sites to increase generalizability, all located within the United States: Pennsylvania, Louisiana, and southern California. The sample was racially and ethnically diverse and predominantly Latino/Hispanic (46%), followed by Black/African American (37%), White (15%), and self-identified other race (2%). Youth completed their first interview after the disposition hearing for their first arrest.

Procedure

The Institutional Review Board (IRB) approved the study procedures, and parental consent and youth assent were obtained. Before answering any questions, participants were informed of the nature of the study, were told there was no penalty for not participating, and received a detailed explanation of the Department of Justice-issued Privacy Certificate that protects them by exempting their identity and responses from subpoenas, court orders, and other types of involuntary disclosures. Interviews were documented using a secure, computer-assisted program.

Measures

Perceptions of Police

At baseline, youth self-reported their responses to 17 items pertaining to perceptions of police and perceptions of police treatment that were adapted from previous research (Casper et al., 2020; Schubert et al., 2004; Tyler, 1997, 2006; Tyler & Huo, 2002). The items were pulled from the Pathways to Desistance study (Mulvey,

[1] The current study did not focus on the obligation to obey the law. Legitimacy has sometimes been considered to be a broad concept that includes both support for the authority, as well as their felt obligation to obey. However, in other cases, obligation to obey has been conceptualized as an outcome rather than a component of legitimacy (Bottoms & Tankebe, 2012; Tyler, 2006; Trinkner, 2019), which has been supported by subsequent research (Fine et al, 2016; Gau, 2014; Maguire et al., 2017; Tankebe, 2013; Tankebe et al., 2016). The conversation continues (Tyler & Jackson, 2013; Nivette et al., 2019; Posch et al., 2020).

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

2013; Schubert et al., 2004, 2016). Pathways created an inventory that was adapted for the study based on previous work (Tyler, 1997; Tyler & Huo, 2002). Previous studies using Crossroads or Pathways data have grouped or used these items in a variety of ways (Augustyn & Ray, 2016; Fagan & Piquero, 2007; Fine et al., 2017; Kaiser & Reisig, 2019; Lee et al., 2011; Wolfe et al., 2016). Below, we separate the 17 items into the factors on which we expect them to load: Voice, Neutrality/Impartiality, Distributive Justice/Bias, Respect, and Legitimacy. As demonstrated in Table 1, the 17 items were generally positively correlated with each other, though interitem correlations ranged from orthogonal to strong.

Voice. Two items were expected to load onto a unique factor that we would call Voice: "During your last contact with the police when you were accused of a crime, how much of your story did the police let you tell?" and "Of the people you know who have had a contact with the police (in terms of crime accusation), how much of their story did the police let them tell?" Youth responded: (1) *All of it*; (2) *Most of it*; (3) *Some of it*; (4) *None of it*. These items are reverse-scored such that higher scores were indicative of greater voice.

Neutrality/Impartiality. Five items were expected to load onto a unique factor that we would call Neutrality or Impartiality: "The police considered the evidence/viewpoints in this incident fairly," "The police overlooked evidence/viewpoints in this incident," "The police were honest in the way they handled their case," "The police used evidence that was fair and neutral," and "The police made up their mind prior to receiving any information about the case." Response options were: (1) *Strongly Disagree*; (2) *Disagree*; (3) *Neither Agree nor Disagree*; (4) *Agree*; (5) *Strongly Agree*. When necessary, items were reverse-scored such that higher scores were indicative of a greater sense of neutrality.

Distributive Justice/Bias. Four items were expected to load onto a unique factor that we would call Distributive Justice/Bias. The items tap into the extent to which the youth believe police treat community members differently based on their personal characteristics: "Police treat males and females differently," "Police treat people differently depending how old they are," "Police treat people differently depending on their race/ethnic group," and "Police treat people differently depending on the neighborhoods they are from." Response options were: (1) *Strongly Disagree*; (2) *Disagree*; (3) *Neither Agree nor Disagree*; (4) *Agree*; (5) *Strongly Agree*. All items were reverse-scored so that higher scores indicated more distributive justice and less bias.

Respect. Two items were expected to load onto a unique factor that we would call Respect. The first item was "Think back to the last time the police accused you of doing something wrong. Did the police treat you with respect and dignity or did they disrespect you?" Response options were: (1) *Respect/Dignity*; (2) *Neutral Treatment*; (3) *Disrespect*. The second item was: "Think back to the last time the police accused you of doing something wrong. Did the police show concern for your rights?" Response options were: (1) *Showed a lot of concern*; (2) *Showed some concern*; (3)

Table 1
Correlations Among Items Using the Crossroads Full Sample

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	0.58															
	<0.001	—														
3	0.31	0.22	—													
	<0.001	<0.001														
4	0.03	0.01	−0.03	—												
	0.35	0.99	0.41													
5	0.35	0.23	0.53	−0.04	—											
	<0.001	<0.001	<0.001	0.215												
6	0.30	0.19	0.51	−0.03	0.64	—										
	<0.001	<0.001	<0.001	0.424	<0.001											
7	0.01	0.01	−0.05	0.15	−0.05	−0.12	—									
	0.86	0.87	0.13	<0.001	0.16	<0.001										
8	0.11	0.11	0.09	0.00	0.11	0.07	0.04	—								
	0.001	0.001	0.007	0.93	0.001	0.036	0.21									
9	0.03	0.01	0.03	0.00	0.03	0.03	−0.04	0.36	—							
	0.45	0.77	0.41	0.91	0.39	0.42	0.28	<0.001								
10	0.10	0.07	0.13	0.00	0.20	0.13	−0.01	0.37	0.35	—						
	0.004	0.04	<0.001	0.99	<0.001	<0.001	0.75	<0.001	<0.001							
11	0.12	0.08	0.13	−0.02	0.15	0.11	0.01	0.31	0.30	0.56	—					
	<0.001	0.015	<0.001	0.53	<0.001	0.001	0.74	<0.001	<0.001	<0.001						
12	0.33	0.22	0.36	0.02	0.47	0.35	0.00	0.15	0.07	0.26	0.23	—				
	<0.001	<0.001	<0.001	0.549	<0.001	<0.001	0.924	<0.001	0.043	<0.001	<0.001					
13	0.36	0.26	0.35	−0.08	0.46	0.36	0.05	0.11	0.02	0.24	0.22	0.55	—			
	<0.001	<0.001	<0.001	0.013	<0.001	<0.001	0.142	0.001	0.491	<0.001	<0.001	<0.001				
14	0.22	0.20	0.29	−0.01	0.36	0.29	−0.03	0.11	0.04	0.20	0.19	0.41	0.38	—		
	<0.001	<0.001	<0.001	0.772	<0.001	<0.001	0.365	0.001	0.188	<0.001	<0.001	<0.001	<0.001			
15	0.30	0.23	0.38	−0.03	0.50	0.41	−0.03	0.17	0.04	0.27	0.23	0.41	0.41	0.55	—	
	<0.001	<0.001	<0.001	0.40	<0.001	<0.001	0.41	<0.001	0.19	<0.001	<0.001	<0.001	<0.001	<0.001		
16	0.25	0.25	0.29	−0.06	0.40	0.30	−0.05	0.19	0.06	0.24	0.21	0.39	0.38	0.62	0.62	—
	<0.001	<0.001	<0.001	0.056	<0.001	<0.001	0.11	<0.001	0.08	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
17	0.24	0.21	0.29	−0.04	0.37	0.30	−0.04	0.16	0.04	0.21	0.17	0.36	0.33	0.56	0.56	0.710
	<0.001	<0.001	<0.001	0.20	<0.001	<0.001	0.20	<0.001	0.20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Note. Correlations are Spearman's rho.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Showed little concern; (4) *Showed no concern*. Items were reverse-scored such that higher scores indicated more perceived respect.

Legitimacy. Crossroads utilizes Tyler's four items that tap police legitimacy through support for the police (Tyler, 2006, p. 48; Fine et al., 2016, 2017, 2021; McLean et al., 2019): "I have a great deal of respect for the police"; "Overall, the police are honest"; "I feel proud of the police"; and "I feel people should support the police." Responses were: (1) *Strongly Disagree*; (2) *Somewhat Disagree*; (3) *Somewhat Agree*; (4) *Strongly Agree*.

Self-Reported Offending

At baseline and again at 6 months, youth self-reported their involvement in criminal behavior using the Self-Report of Offending scale (SRO; Huizinga et al., 1991). The widely used scale assesses their involvement in 24 different criminal acts (ranging in severity from selling drugs to homicide), and variety scores were calculated to indicate the number of different types of crimes the youth had committed in the past 6 months at baseline and again at the 6-month follow-up interview. Variety scores are the preferred method for summarizing individual criminal offending (Osgood et al., 2002; Sweeten, 2012). They are less subject to recall bias as compared with frequency approaches, and studies of justice-involved youth find a strong within-age relation between self-reported offending frequency and variety (Monahan & Piquero, 2009). It is important to note that this study received a Privacy Certificate from the Department of Justice to encourage honest reporting. The youth were reminded before beginning sensitive questions, such as the SRO scale, that their identities and answers are protected from subpoenas, court orders, and other types of involuntary disclosures. Nonetheless, despite the Privacy Certificate and the ubiquity of self-report methods for measuring offending behavior (Thornberry & Krohn, 2000), such methods do clearly have measurement biases (Gomes et al., 2019).

Plan of Analysis

Analyses were conducted in Mplus Version 8 and Stata 16. The first goal of the present study was to better understand the underlying factor structure. To address this goal, we conducted two complementary factor analyses. In general, factor models are used to understand the underlying structure of the data by condensing a large number of items down to a few factors. In essence, the goal is to identify a few underlying latent factors that significantly predict (and represent) a set of individual items. First, we randomly split the sample into two halves and conducted an exploratory factor analysis (EFA) with oblique rotation using one of the two halves. EFA is a freely estimated model, where each factor is allowed to predict each item without any restrictions. Because of the unrestrictive nature of this model, an EFA is typically used as a first step in scale development (Flora & Flake, 2017). Using the 17 items, we compared one-, two-, three-, four-, and five-factor structure models in the EFA. Because of the nature of the individual items and the response options, individual items as were specified as categorical (ordinal) variables in Mplus. We selected the "best" fitting factor model in the EFA using face validity of the factors, traditional model fit indices (chi square tests between models with N factors and $N - 1$ factors; root mean square error of approximation [RMSEA], comparative fit index [CFI], Tucker-Lewis index [TLI]), theoretical precedence, individual factor loadings (i.e., regression coefficients), and the correlations between the items and the factors (Flora & Flake, 2017; Preacher et al., 2013). As suggested by others, the threshold for acceptable factor loadings was a value of .40 or higher.

To validate the results from the EFA, we conducted a confirmatory factor analysis (CFA) with the second half of the Crossroads data. Importantly, the EFA was conducted on a randomly selected subsample of the data and the CFA was conducted on the remaining sample (i.e., no cases were used in both the EFA and CFA). In general, each item in a CFA model is predicted by a single factor (i.e., no cross-loadings) using a prespecified factor structure. CFA models are traditionally used to validate an empirically or theoretically based factor structure. In our case, we used the CFA results (e.g., model fit indices; factor loadings) to validate the best fitting factor solution that emerged in the EFA. In the next step, we combined the two halves and used all available data to examine the descriptive and scale reliability statistics for the final scales.

The second goal was to examine to what extent each of the factors identified in the models were associated with concurrent and subsequent self-reported offending. The first five models regressed self-reported offending at baseline on each of the individual factors in bivariate negative binomial regression models (i.e., an examination of the concurrent associations). The goal was to identify whether, when each was included individually, it was associated with concurrent self-reported offending. To examine the extent to which legitimacy accounted for the associations between the other components of procedural justice and offending, the sixth model included all factors except legitimacy and the seventh model added legitimacy. The last model (Model Eight) included all components of perceptions of police as well as commonly used covariates (age, processing type, race). These last models allowed us to examine the extent to which each procedural justice scale was associated with concurrent self-reported offending once accounting for the other potential confounding factors. Variance inflation factors (VIFs) were calculated to evaluate potential issues related to multicollinearity.

Finally, within a structural equation modeling (SEM) framework, we examined whether legitimacy (at baseline) mediated the association between the other procedural justice factors (at baseline) and changes in subsequent self-reported offending 6 months later (models controlled for baseline offending, processing, age at first arrest, and race). Consistent with the specification of the baseline offending models in the previous step, self-reported offending at 6 months was declared as a count variable with a negative binomial distribution. The SEM was estimated with maximum likelihood. To assess the significance of the indirect effects, percentile bootstrapping was conducted by taking 10,000 samples to construct 95% bias-corrected confidence intervals (Hayes & Scharkow, 2013; Preacher & Hayes, 2008).

Results

Results From the Exploratory and Confirmatory Factor Analysis Models

The results from the EFA with the first random sample (N = 608) demonstrated that a five-factor solution was the best fit to the

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

data (see Table 2). The five factors that emerged from the EFA were Voice (two items), Neutrality/Impartiality (three items), Distributive Justice/Bias (four items), Respect (three items), and Legitimacy (four items). Each item had a significant factor loading with the corresponding factor and the items were significantly correlated with the factor to which they were assigned (see Table 3). One item ("The police overlooked evidence/viewpoints in this incident") did not fit any of the five factors. One item ("The police made up their mind prior to receiving any information about the case") unexpectedly loaded onto Respect (.57) more strongly than it did on Neutrality/Impartiality (.39). See Table 4 for the final items that corresponded to each factor. In addition, the five latent factors in the EFA had small-to-medium correlations with each other (range: r = .13 to r = .46; Table 5), suggesting that each latent factor represented a unique underlying construct.

In the next step of the analysis, we conducted a CFA with the final five-factor model from the EFA using the second randomly selected subsample (N = 608). As demonstrated in Table 6, results from the CFA demonstrated that the five-factor model had acceptable fit to the data. In addition, all factor loadings for the individual items were moderately high (all values > .45), with the exception of one item ("The police made up their mind prior to receiving any information about the case") which was not associated with the Respect factor (p = .30) it had loaded onto with the Random Sample 1 in the EFA. As such, we cannot recommend its inclusion and have excluded this item from the remaining analyses with the scales.

Descriptive and Reliability Information for Final Scales

In the next step of the analysis, we used the full sample (N = 1,216) to create the final scales by calculating the mean of the items on each factor. As demonstrated in Table 7, the five scales demonstrated acceptable reliability (α ranged from .69 to .86) and the individual items were highly correlated with the scale to which they were assigned (all rs > .67). In addition, the five scales were moderately correlated with each other, suggesting that the scales represented distinct, yet related, constructs (range: r = .14 to r = .47; see Table 8).

Association With Concurrent Self-Reported Offending

Table 9 provides the associations between the factors and concurrent self-report of offending in bivariate and multivariate models. The results of the bivariate models indicated that each factor—Voice, Neutrality/Impartiality, Distributive Justice/Bias, and Respect—was individually associated with youth self-reported offending. We included them all simultaneously in a multivariate Model 5, added legitimacy to multivariate Model 5 to create Model 6, and finally added covariates (age, processing type, and race) to Model 6 to create Model 7. Multicollinearity statistics (VIFs < 1.64; M VIF = 1.39) indicated that multicollinearity was not an issue. In contrast to the bivariate models, the multivariate model with all four procedural justice scales indicated that two factors—Voice and Respect—were no longer associated with self-reported offending (see Model 5). Moreover, when Legitimacy and other covariates were added to the model (see Models 6 and 7), the only significant variables associated with self-reported offending were Distributive Justice/Bias, Legitimacy, and race/ethnicity.

Association With Changes in Subsequent Self-Reported Offending

Finally, within a SEM framework, we examined whether any of the procedural justice scales had indirect effects on subsequent self-reported offending at 6 months through Legitimacy (i.e., procedural justice scales → Legitimacy → subsequent offending), accounting for baseline offending, age, race, and processing (see Table 10). The results indicated that Voice, Neutrality/Impartiality, Distributive Justice/Bias, and Respect were all directly associated with Legitimacy. Legitimacy, in turn, was directly associated with changes in subsequent self-reported offending. Significant indirect effects indicated that Legitimacy significantly mediated the associations between all 4 procedural justice scales and subsequent offending (see Table 10). In fact, when Legitimacy was included in the model, the only procedural justice scale that had a significant direct association with subsequent self-report of offending was Neutrality/Impartiality.

Supplemental Models

These perceptions of police items from the Crossroads study were drawn from the Pathways to Desistance study of 1,169 males who were adjudicated or found guilty of serious offenses (Mulvey, 2013; Schubert et al., 2004, 2016). The Pathways to Desistance study is a 7-year, longitudinal study of youth from two sites (Phoenix, AZ, and Philadelphia, PA) that commenced in November 2000. A supplemental set of models were run as a replication study to determine the extent to which the factor structure identified in the Crossroads study fits the data in the Pathways to Desistance

Table 2
Exploratory Factory Analysis Comparing One- Through Five-Factor Solutions

						χ^2 test between N and $N-1$ factors	
Factor	χ^2	df	RMSEA	CFI	TLI	χ^2	df
One-factor	2,258.34***	119	0.170	0.740	0.702	NA	
Two-factor	1,319.34***	103	0.139	0.852	0.805	699.93***	16
Three-factor	755.68***	88	0.112	0.919	0.874	423.55***	15
Four-factor	379.24***	74	0.082	0.963	0.932	280.94***	14
Five-factor	240.15***	61	0.070	0.978	0.951	122.47***	13

Note. df = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index. The six-factor model was tested but did not converge therefore it was excluded.
*** $p < .001$.

Table 3

Factor Loadings and Correlations Between Items and Factors From Five-Factor Exploratory Factor Analysis Solution in the Crossroads Random Sample 1 (N = 608)

Item	Factor loadings for each factor					Correlations between items and each factor				
	Factor 1 (Voice)	Factor 2 (Neutrality/ Impartiality)	Factor 3 (Legitimacy)	Factor 4 (Distributive Justice/Bias)	Factor 5 (Respect)	Factor 1 (Voice)	Factor 2 (Neutrality/ Impartiality)	Factor 3 (Legitimacy)	Factor 4 (Distributive Justice/Bias)	Factor 5 (Respect)
Item 1	**0.70***	0.14	0.04	0.00	0.07	**0.78**	0.43	0.38	0.16	0.28
Item 2	**0.88***	−0.04	−0.01	−0.02	−0.03	**0.85**	0.24	0.27	0.08	0.13
Item 3	0.04	**0.76***	−0.05	0.01	−0.05	0.27	**0.73**	0.31	0.16	0.25
Item 4	−0.01	−0.10	−0.15*	0.02	0.36*	−0.02	−0.02	−0.10	0.02	0.28
Item 5	0.00	**0.69***	0.20*	0.00	0.09	0.33	**0.82**	0.55	0.27	0.42
Item 6	−0.01	**0.80***	0.00	−0.01	0.01	0.27	**0.80**	0.36	0.17	0.33
Item 7	−0.02	−0.39*	−0.02	−0.03	**0.57***	−0.05	−0.18	−0.09	0.01	**0.40**
Item 8	0.11*	0.00	−0.01	**0.54***	0.02	0.18	0.17	0.26	**0.55**	0.17
Item 9	0.12*	−0.04	−0.19*	**0.64***	−0.10	0.11	0.02	0.08	**0.54**	0.02
Item 10	−0.05*	0.03	0.04	**0.85***	0.03	0.09	0.24	0.39	**0.87**	0.24
Item 11	−0.07*	0.02	0.08	**0.71***	0.05	0.06	0.22	0.37	**0.75**	0.23
Item 12	0.18*	0.09	0.36*	0.07	**0.40***	0.43	0.50	0.59	0.36	**0.57**
Item 13	0.20	0.17	0.29*	0.01	**0.31***	0.43	0.50	0.52	0.27	**0.49**
Item 14	0.01	−0.04	**0.79***	−0.03	0.08	0.29	0.36	**0.78**	0.31	0.24
Item 15	−0.05	0.18*	**0.72***	0.03	0.03	0.28	0.51	**0.80**	0.38	0.27
Item 16	0.04	−0.05	**0.93***	0.01	−0.08	0.34	0.37	**0.90**	0.37	0.13
Item 17	0.00	0.00	**0.89***	0.01	−0.15*	0.29	0.36	**0.86**	0.34	0.06

Note. Bold indicates the items that loaded onto the final factor.
* $p < .05$.

study. It is certainly possible that the factor structures would differ because the Pathways to Desistance study commenced a decade before Crossroads, the policing environments may have changed over time, and also because the youth in the Pathways sample had been adjudicated for serious, felony-level offenses whereas Crossroads youth were comparatively much lower-level offenders. Details on the Pathways sample are provided in the online supplemental materials and are available on the study website (https://www.pathwaysstudy.pitt.edu).

Using the Pathways to Desistance sample, we conducted a CFA with the final five-factor model from the Crossroads EFA and CFA results. We conducted one model with Item 7 and one model without it. As demonstrated in Table 6, results from the CFA demonstrated that the two five-factor models fit the data well. Results also showed that Item 7 had a much lower factor loading than the other two items on the respect factor (standardized factor loading of .30 compared with .84 and .85). As such, these results corroborated our decision to exclude Item 7 from the final scales. Besides Item 7 (which was excluded from the final scales), all factor loadings for the individual items were moderately high (all values > .47, M = .77). We calculated the mean of the items on each factor, and as demonstrated in Table 7, the five scales demonstrated acceptable reliability and the individual items were highly correlated with the scale to which they were assigned (all rs > .66). In addition, the five scales were moderately correlated with each other, suggesting that the scales represented distinct, yet related, const-ructs (range: r = .13 to r = .49; see Table 8). Altogether, this set of supplemental models found that the factor structure identified in the sample of low-level, adolescent male offenders in the Crossroads study was also a reasonable fit for the Pathways to Desistance sample of felony-level, adolescent male offenders from a decade earlier. Future researchers using the Pathways to Desistance dataset should consider this factor structure moving forward.

Discussion

Research on perceptions of the police has surged (Jackson & Bradford, 2019; Mazerolle et al., 2019; Nagin & Telep, 2017; Nivette et al., 2019; Nix et al., 2020; Tyler & Trinkner, 2018), largely because positive perceptions are associated with cooperation with the police and compliance with the law (Bolger & Walters, 2019; Tyler & Huo, 2002; Tyler, 2006, 2017). Policymakers are certainly paying attention, especially in the wake of the massive civil unrest following the deaths of multiple people of color at the hands of law enforcement in 2014; indeed, the first pillar of President Task Force on 21st Century Policing's (2015) landmark report was improving police legitimacy. Yet the harsh reality is that enthusiasm outpaces methodological rigor (Gau, 2011; Jackson, 2018).

A number of large-scale studies of youth have emerged in the legal socialization literature, including the Crossroads study (e.g., Cavanagh et al., 2020; Fine et al., 2017, 2021), Pathways to Desistance (e.g., McLean et al., 2019; Piquero et al., 2005), New Hampshire Youth Survey (e.g., Rebellon et al., 2012; Trinkner & Cohn, 2014), and Zurich Project on Social Development from Childhood to Adulthood (e.g., Nivette et al., 2019). This study contributes to the literature through identifying an underlying factor structure of the items to determine whether the observed structure was consistent with theoretical models of these constructs. The results indicated that in the Crossroads Study, the items separated onto five distinct yet related factors: Voice (two items), Neutrality/Impartiality (three items), Distributive Justice/Bias (four items), Respect (two items), and Legitimacy (four items). These

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 4

Final Factors and Individual Items From the Best Fitting Solution of the Exploratory Factor Analysis Using the Crossroads Random Sample 1

Factor name	Item # in Table 3	Individual items
Voice	1	During your last contact with the police when you were accused of a crime, how much of your story did the police let you tell?
	2	Of the people you know who have had a contact with the police (in terms of crime accusation), how much of their story did the police let them tell?
Neutrality/Impartiality	3	The police considered the evidence/viewpoints in this incident fairly.
	5	The police were honest in the way they handled their case.
	6	The police used evidence that was fair and neutral.
Legitimacy	14	I have a great deal of respect for the police.
	15	Overall, the police are honest.
	16	I feel proud of the police.
	17	I feel people should support the police.
Distributive Justice/bias	8	Police treat males and females differently.
	9	Police treat people differently depending how old they are.
	10	Police treat people differently depending on their race/ethnic group.
	11	Police treat people differently depending on the neighborhoods they are from.
Respect	7	The police made up their mind prior to receiving any information about the case.[a]
	12	Think back to the last time the police accused you of doing something wrong. Did the police treat you with respect and dignity or did they disrespect you?
	13	Think back to the last time the police accused you of doing something wrong. Did the police show concern for your rights?

[a] Although Item 7 loaded onto the respect factor in the EFA sample, due to the low face validity with the factor, the low correlations with the other items, the relatively low correlation between the item and the factor, and the low/nonsignificant factor loading of this item in the CFA in Crossroads Random Sample 2, we decided to omit this item from the final scale. The confirmatory factor analysis using the second Crossroads random sample and the full Pathways to Desistance sample are consistent with these results. The items were reverse-scored where necessary such that higher values indicated more positive evaluations.

results were replicated in the Supplemental Models using the Pathways to Desistance study, indicating that youth who commit relatively minor violations view the police and conceptualize procedural justice in similar ways to those who commit more severe violations.

Specifically, four items loaded onto a construct we called "Distributive Justice/Bias." The items focus on bias, particularly the extent to which police treat people differently based on their sex or gender, age, race/ethnicity, or the neighborhoods they are from. As such, these are classic bias items. However, it is also reasonable to argue that the construct should be called "distributive justice" because the construct pertains to one's perceptions that the "distribution of outcomes (as between rich/poor, different ethnic groups, male/female, etc.) is fair" (Tankebe, 2013, p. 100; see also Tankebe et al., 2016; Trinkner, 2019). Yet at the same time, it is plausible that they truly reflect *procedural* justice more closely than *distributive* justice. A relatively consistent notion in the field is that distributive justice refers to unfairness or inequality in the allocation of *outcomes* (Jackson, 2018; Sunshine & Tyler, 2015; Trinkner et al., 2020; Wolfe et al., 2016) whereas procedural justice typically refers to the unfairness or inequality of the actual *treatment* processes (e.g., Jackson, 2018; Trinkner et al., 2020; Wolfe et al., 2016). It is debatable whether the items better reflect distributive or procedural justice, yet, in either case, they focus on police bias (see Sunshine & Tyler, 2015).

The second emergent factor was labeled "Legitimacy." Jackson and Bradford (2019, p. 286) recently wrote that, "Legitimacy is an abstract and unobservable psychological construct, and there are numerous ways to operationalize [it]." The items were Tyler's original four-item scale for tapping legitimacy through assessing support for police (Tyler, 2006). As Tyler wrote of the scale, it assesses legitimacy through, "a general affective orientation toward authorities" (Tyler, 2006, p. 47). More recent researchers also write that the scale assesses, "the concepts of trust, honesty, and respect that have been identified as key components of legitimacy" (McLean et al., 2019, p. 55).

However, in the years and decades since Tyler's landmark book and since the Pathways to Desistance and Crossroads studies were

Table 5

Correlations Among Factors From Five-Factor Solution in the Exploratory Factor Analysis With the Crossroads Random Sample 1 (N = 608)

Factor	1 (Voice)	2 (Neutrality/ Impartiality)	3 (Legitimacy)	4 (Distributive Justice/Bias)	5 (Respect)
Factor 1 (Voice)	1				
Factor 2 (Neutrality/ Impartiality)	.35*	1			
Factor 3 (Legitimacy)	.36*	.46*	1		
Factor 4 (Distributive justice/bias)	.13*	.23*	.42*	1	
Factor 5 (Respect)	.21*	.41*	.24*	.24*	1

* $p < .05$.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 6
Standardized Factor Loadings for Each Item in the Confirmatory Factory Analyses With and Without Item 7

Factor	Crossroads random sample 2 (N = 608)				Pathways full sample (N = 1,169)			
	Model 1 (With Item 7)		Model 2 (Without Item 7)		Model 3 (With Item 7)		Model 4 (Without Item 7)	
	Est	*SE*	Est	*SE*	Est	*SE*	Est	*SE*
Factor 1 (Voice)								
Item 1	0.88***	0.05	0.88***	0.05	0.95**	0.04	0.94***	0.04
Item 2	0.78***	0.04	0.78***	0.04	0.65***	0.03	0.66***	0.03
Factor 2 (Neutrality/Impartiality)								
Item 3	0.73***	0.02	0.73***	0.02	0.71***	0.02	0.72***	0.02
Item 5	0.89***	0.02	0.89***	0.02	0.87***	0.02	0.87***	0.02
Item 6	0.84***	0.02	0.84***	0.02	0.76***	0.02	0.76***	0.02
Factor 3 (Legitimacy)								
Item 14	0.76***	0.02	0.76***	0.02	0.75***	0.02	0.75***	0.02
Item 15	0.82***	0.02	0.82***	0.02	0.82***	0.02	0.82***	0.02
Item 16	0.90***	0.01	0.90***	0.01	0.89***	0.01	0.89***	0.01
Item 17	0.85***	0.02	0.85***	0.02	0.81***	0.01	0.82***	0.01
Factor 4 (Distributive justice/bias)								
Item 8	0.57***	0.04	0.57***	0.04	0.59***	0.03	0.59***	0.03
Item 9	0.45***	0.04	0.45***	0.04	0.47***	0.03	0.47***	0.03
Item 10	0.85***	0.03	0.85***	0.03	0.79***	0.02	0.80***	0.02
Item 11	0.75***	0.03	0.75***	0.03	0.75***	0.02	0.74***	0.02
Factor 5 (Respect)								
Item 7	−0.05	0.05			0.30***	0.03		
Item 12	0.82***	0.03	0.82***	0.03	0.84***	0.02	0.84***	0.02
Item 13	0.80***	0.03	0.80***	0.03	0.85***	0.02	0.86***	0.03
Model fit statistics								
χ^2 (*df*)	419.75 (94)***		381.71 (80)***		548.32 (94)***		516.83 (80)***	
RMSEA	0.075		0.079		0.064		0.068	
CFI	0.963		0.966		0.965		0.965	
TLI	0.953		0.955		0.955		0.954	

Note. *df* = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index.
*** $p < .001$.

initiated, the landscape surrounding legitimacy has shifted (Bolger & Walters, 2019; Posch et al., 2020). For instance, theoretical perspectives indicate that legitimacy may also include concerns about normative alignment (Huq et al., 2017). Normative alignment refers to individuals' sense that authority figures, such as law enforcement, act in ways that are aligned with the established, shared ethical frameworks (Bradford et al., 2014; Jackson, 2018). On a different note, legitimacy may be explained in part by bounded authority (Hamm et al., 2017; Trinkner & Tyler, 2016). As Trinkner and colleagues (Trinkner et al., 2018) explain, rather than focus on "how" police exercise legal power, bounded authority is concerned with the "when," "where," and "what" power they exercise. Such concerns over bounded authority may impact one's perceptions of legitimacy. Further, there are a number of studies assessing legitimacy through or including the obligation to obey (Jackson, 2018; Tyler, 2006), or separating out normative and nonnormative obedience (Posch et al., 2020; Tankebe et al., 2016). At the same time, others argue that the obligation to obey the law is theoretically and empirically distinguishable from legitimacy (Gau, 2014, 2015; Tankebe, 2013). Relatedly, neither dataset assessed trust in police or police effectiveness, which some consider to be an antecedent of legitimacy (Zahnow et al., 2019) whereas others consider it to be a constituent component of legitimacy (Nivette et al., 2019). Altogether, although the four-item legitimacy scale is derived from sound theory (Tyler, 2006), it may constitute a measure that is more representative of more classical views of legitimacy rather than future conceptualizations (Pina-Sánchez & Brunton-Smith, 2020).

Beyond examining the factor structures, we examined whether each identified factor was individually associated with youth self-reported offending, whether they were still associated when accounting for the other factors, and whether including covariates impacted the associations. Most importantly, we examined whether legitimacy mediated the associations between the procedural justice measures and subsequent self-reported offending. We found that each procedural justice factor—Voice, Neutrality/Impartiality, Distributive Justice/Bias, and Respect—was individually associated with concurrent self-reported offending in the bivariate models. In the multivariate models that included all factors simultaneously as well as Legitimacy and the covariates, only Distributive Justice/Bias and Legitimacy were consistently associated with concurrent self-reported offending. What is more, the results of the structural equation models indicated that procedural justice elements largely operated on self-reported offending through legitimacy. Thus, legitimacy appears to be a key intervening variable in the process, as Tyler's (2006, 2017) theoretical model predicted.

Limitations

This study has several important limitations. First, this study focused exclusively on male youth who were arrested for the first time for low-to-moderate offenses and who were within a specific age range where justice system contact for those types of offenses increases. It is unknown whether these findings extend to youth in community-based samples, to females, or to youth outside of the

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 7
Factor, Scale, and Item Descriptive Information

Factor/Scale Name	Item	Crossroads full sample (N = 1,216) Scale α	Scale M (SD)	Item correlation with scale	Pathways to desistance full sample (N = 1,169) Scale α	Scale M (SD)	Item correlation with scale
Voice	During your last contact with the police when you were accused of a crime, how much of your story did the police let you tell?	0.71	2.73 (1.07)	0.92***	0.66	2.37 (1.04)	0.90***
	Of the people you know who have had a contact with the police (in terms of crime accusation), how much of their story did the police let them tell?			0.88***			0.86***
Neutrality/Impartiality	The police considered the evidence/viewpoints in this incident fairly.	0.79	3.23 (0.93)	0.82***	0.77	2.72 (0.91)	0.82***
	The police were honest in the way they handled their case.			0.86***			0.83***
	The police used evidence that was fair and neutral.			0.85***			0.84***
Legitimacy	I have a great deal of respect for the police.	0.86	2.35 (0.83)	0.82***	0.82	1.94 (0.81)	0.80***
	Overall, the police are honest.			0.82***			0.77***
	I feel proud of the police.			0.87***			0.85***
	I feel people should support the police.			0.85***			0.83***
Distributive justice/bias	Police treat males and females differently (reverse scored)	0.71	2.64 (0.84)	0.71***	0.67	2.54 (0.74)	0.67***
	Police treat people differently depending how old they are. (reverse scored)			0.67***			0.66***
	Police treat people differently depending on their race/ethnic group. (reverse scored)			0.79***			0.75***
	Police treat people differently depending on the neighborhoods they are from. (reverse scored)			0.76***			0.74***
Respect	Think back to the last time the police accused you of doing something wrong. Did the police treat you with respect and dignity or did they disrespect you?	0.69	2.15 (0.82)	0.85***	0.75	1.74 (0.81)	0.87***
	Think back to the last time the police accused you of doing something wrong. Did the police show concern for your rights?			0.90***			0.92***

*** $p < .001$.

United States. Second, the results may be specific to adolescents and do not necessarily address conceptual issues in procedural justice relevant to adults or children. Both the factor structure and relations tested here may differ between child, youth, and adult samples, although only a few longitudinal studies follow youth into adulthood and the literature is quite limited to date (Fine et al., 2021; Nivette et al., 2019). Future research should apply these measures to younger samples of children to examine whether they differentiate views the same way adolescents do and to identify at what ages developmental differences emerge in youths' conceptualizations of police.

Third, the study used self-reported offending variety scores because they are the preferred method for summarizing individual criminal offending (Osgood et al., 2002; Sweeten, 2012). This approach reduces recall bias and there is a strong association between self-reported offending variety and frequency (Monahan & Piquero, 2009). Despite these strengths, these variety scores do have clear limitations, including the fact that someone who commits a single offense will get the same score of "1" regardless of whether it is relatively minor (e.g., selling drugs) or more serious (e.g., homicide). Researchers studying self-reported offending would benefit from work revealing alternative ways to assess self-reported offending, especially because no universal standards for weighing offense severity exist.

Finally, there was one unexpected result that we were unable to explain. In the mediation models, the direction of the association between neutrality and self-reported offending was the opposite of what would be expected based on theory. However, upon further parsing the data by rerunning bivariate and stepwise multivariate regression models with subsequent self-reported offending as the dependent variable, it becomes abundantly clear that neutrality does not have a positive association with self-reported offending until we add legitimacy to the model (with or without the other indicators of procedural justice and/or the control variables). In all other models, the association between neutrality and subsequent offending is not significant; the association only becomes statistically significant when we include legitimacy as a covariate (results from stepwise models available from the authors by request). Future studies should try to understand this unexpected finding by using more comprehensive measures and similar longitudinal designs.

Conclusions

This study found that the factor structure identified in the sample of low-level, adolescent male offenders in the Crossroads study also fit the youth in the Pathways to Desistance sample. That is, across these two samples—one a contemporary sample of youth who were arrested for the first time and for low-to-moderate

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 8
Correlations Among Final Scales

Scale number & name	Crossroads full sample: Scale 1 (Voice)	Scale 2 (Neutrality/ Impartiality)	Scale 3 (Legitimacy)	Scale 4 (Distributive Justice/Bias)	Scale 5 (Respect)	Pathways to desistance full sample: Scale 1 (Voice)	Scale 2 (Neutrality/ Impartiality)	Scale 3 (Legitimacy)	Scale 4 (Distributive Justice/Bias)	Scale 5 (Respect)
Scale 1 (Voice)	1					1				
Scale 2 (Neutrality/ Impartiality)	.32***	1				.34***	1			
Scale 3 (Legitimacy)	.31***	.47***	1			.28***	.37***	1		
Scale 4 (Distributive justice/bias)	.14***	.18***	.29***	1		.13***	.22***	.24***	1	
Scale 5 (Respect)	.37***	.50***	.51***	.27***	1	.37***	.49***	.45***	.24***	1

*** $p < .001$.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

offenses, and the other a sample of youth arrested for felony-level offenses from a decade earlier—youth conceptualize police in similar ways. These results may have implications about social cognition and behavior during the adolescent developmental period, though more research with community samples is certainly needed. Altogether, the findings have implications for policies enacted to curb offending for members of each offending group and to enhance perceptions of police. We consider three broad conclusions and implications for police in turn.

First, police neutrality/impartiality emerged as an important lever for improving perceptions of police legitimacy and policing more generally. On a broad level, neutrality/impartiality refers to a broad set of concerns, including considering evidence and viewpoints fairly, being honest in how you handle a youth's case, and using evidence that is fair. There are a number of officer retraining programs that focus on neutrality/impartiality. For instance, consider the Chicago Police Department's (CPD) new one-day-long procedurally just policing retraining program on impartiality/neutrality, respect, and trustworthiness. In line with broad views of neutrality/impartiality, the training encourages police officers, "to provide opportunities for civilians to state and explain their case before making a decision, [and] apply consistent and explicable rules-based decision-making" (Wood et al., 2020, p. 1). Enhancing police neutrality/impartiality in police actions, broadly defined, appears critically important but we need more evidence on their impact (Wood et al., 2021). To the extent that it improves legitimacy, it may subsequently reduce youth crime.

Beyond improving police neutrality/impartiality on a broad level, there are implications for specific police actions, particularly interrogations. During interrogations, law enforcement in the United States are permitted to lie to juvenile suspects in a variety of ways, including lying about having evidence or using minimization techniques that imply, but do not explicitly offer, leniency (see Cabell et al., 2020; Cleary, 2017; Redlich et al., 2020; Slobogin, 2020; Woolard et al., 2008). Although this is technically legal, many perceive such actions to be coercive and antithetical to neutrality/impartiality (Mindthoff et al., 2018), and many parents lack sufficient knowledge to protect their youth during interrogations (Cleary & Warner, 2017). Researchers should examine how improving the voice, neutrality/

Table 9
Concurrent Associations Between Procedural Justice Subscales and Self-Report of Offending in Bivariate and Multivariate Models

Crossroads full sample	Model 1 Coef. (p)	Model 2 Coef. (p)	Model 3 Coef. (p)	Model 4 Coef. (p)	Model 5 Coef. (p)	Model 6 Coef. (p)	Model 7 Coef. (p)
Procedural justice scales							
Voice	**−0.07 (.03)**				−0.00 (.94)	0.02 (.48)	−0.00 (.79)
Neutrality/Impartiality		**−0.15 (<.001)**			−0.06 (.17)	0.05 (.24)	0.05 (.25)
Distributive justice/Bias			**−0.25 (<.001)**		**−0.19 (<.001)**	**−0.13 (.004)**	**−0.10 (.03)**
respect				**−0.24 (<.001)**	**−0.15 (.004)**	−0.02 (.77)	0.03 (.54)
Legitimacy						**−0.49 (<.001)**	**−0.52 (<.001)**
Control variables							
Age							0.03 (.25)
Formal processing							0.07 (.29)
Race							
Black (vs. white)							**−0.57 (<.001)**
Latino (vs. white)							**−0.27 (.006)**
Other (vs. white)							−0.23 (.32)

Note. Negative binomial regressions used for all models. Bold typeface used to emphasize significant findings based on $p < .05$. All models indicated that a negative binomial regression model was a better fit to the data than a Poisson model (all p statistics testing the likelihood ratio test that $\alpha = 0$ were $<$ .001).

Table 10

Mediation Model for Associations Between Procedural Justice Subscales and Changes in Subsequent Self-Reported Offending (6 Months) Through Legitimacy

Outcome	Variable	Est	*SE*	*p*	95% CI
Predicting legitimacy					
	Voice	0.05	0.02	.007	[0.02, 0.09]
	Neutrality/Impartiality	0.21	0.03	<.001	[0.16, 0.27]
	Distributive Justice/Bias	0.12	0.03	<.001	[0.08, 0.17]
	Respect	0.29	0.03	<.001	[0.24, 0.35]
	Baseline offending	−0.08	0.01	<.001	[−0.09, −0.06]
	Processing	−0.07	0.04	.058	[−0.15, 0.01]
	Age	−0.03	0.02	.052	[−0.06, 0.01]
	Black (vs. white)	−0.25	0.06	<.001	[−0.36, −0.14]
	Latino (vs. white)	−0.10	0.06	.07	[−0.21, 0.09]
	Other (vs. white)	−0.13	0.12	.29	[−0.38, 0.11]
Predicting self-reported offending					
	Legitimacy				
	Direct	−0.34	0.07	<.001	[−0.47, −0.19]
	Voice				
	Direct[a]	−0.04	0.05	.37	[−0.13, 0.05]
	Indirect[b]	−0.02	0.01	.020	[−0.038, −0.007]
	Neutrality/Impartiality				
	Direct	0.15	0.06	.009	[0.04, 0.26]
	Indirect	−0.07	0.02	<.001	[−0.103, −0.037]
	Distributive justice/bias				
	Direct	−0.06	0.06	.32	[−0.17, 0.05]
	Indirect	−0.04	0.01	.001	[−0.063, −0.016]
	Respect				
	Direct	−0.04	0.07	.54	[−0.18, 0.09]
	Indirect	−0.10	0.02	<.001	[−0.142, −0.051]
	Baseline offending	0.24	0.02	<.001	[0.20, 0.29]
	Processing	0.11	0.09	.22	[−0.06, 0.29]
	Age	−0.03	0.03	.42	[−0.10, 0.04]
	Black (vs. white)	−0.25	0.14	.08	[−0.51, 0.04]
	Latino (vs. white)	0.03	0.13	.79	[−0.20, 0.29]
	Other (vs. white)	−0.28	0.36	.43	[−1.08, 0.31]

Note. To assess the significance of the indirect effects, percentile bootstrapping was conducted by taking 10,000 samples to construct 95% bias-corrected confidence intervals.
[a] Direct effect path to subsequent offending in the fully adjusted model. [b] Indirect path represents the indirect path from the scale (Voice, Neutrality/Impartiality, Distributive Justice/Bias, Respect) to subsequent offending through Legitimacy (i.e., procedural justice scale → legitimacy → offending).

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

impartiality, and respect youth experience during policing experiences like interrogations might impact youth offending, particularly through promoting perceptions of legitimacy.

A second implication for research and policy is that police must eliminate biased policing practices, including treating people differently based on their race, sex or gender, age, or where they are from. To the extent that youth perceive police to be biased, the youth are more likely to engage in crime—both concurrently and in the future, and even after accounting for past offending behavior. From a practical perspective, guidance already exists for strategies to reduce police bias and inequality (Engel et al., 2020; Goff et al., 2016). Researchers and departments are examining ways to reduce biased policing, including trainings on perspective taking and stereotype replacement (Dunham & Petersen, 2017; Mears et al., 2021). Studies indicate that diversifying police forces, enhancing supervision through body cameras (Gaub & White, 2020; Hamm et al., 2019), and empowering civilian review or control boards (Hecker, 1996; Prenzler & Ronken, 2001) appear promising for improving policing in general, though the literature is often quite mixed and not yet firmly established. Whether such efforts reduce biased policing in particular is understudied.

Finally, we turn to legitimacy. Consistent with meta-analytic evidence (Walters & Bolger, 2018), legitimacy was consistently associated with concurrent self-reported offending in bivariate and multivariate models. Consequently, as President Task Force on 21st Century Policing's (2015) report clearly indicated, departments must focus on improving their legitimacy because it is believed to be foundational to crime-control and to maintaining a safe society without coercion (Posch et al., 2020; Tyler, 2006). To improve legitimacy, police must focus on enhancing procedural justice considering that one of the most widely-agreed upon notions in this body of literature is that when individuals interact with the police either personally or vicariously, their perceptions of the interactions translate into how they evaluate the police's legitimacy (Fagan & Tyler, 2005, p. 228). At the same time, because how an individual interacts with police within a given encounter may be an amalgam of both immediate experiences and prior beliefs (Trinkner et al., 2019), legitimacy

may also shape how one perceives police actions and engages with the police in the future (O'Brien & Tyler, 2020; Saunders & Kilmer, 2021; Trinkner et al., 2019). Consequently, police should improve their practices because it may enhance their legitimacy, improve the way the public interfaces with them in the future, and reduce offending. However, we need more evidence showing explicitly how changing police behavior effectively changes individuals' attitudes toward police and their subsequent behavior. While the data to-date indicate that improving policing would very likely enhance the public's perceptions of their legitimacy, causal data are actually quite limited (Nagin & Telep, 2017).

References

Augustyn, M. B. (2015). The (ir)relevance of procedural justice in the pathways to crime. *Law and Human Behavior*, *39*(4), 388–401. https://doi.org/10.1037/lhb0000122

Augustyn, M. B., & Ray, J. V. (2016). Psychopathy and perceptions of procedural justice. *Journal of Criminal Justice*, *46*, 170–183. https://doi.org/10.1016/j.jcrimjus.2016.05.007

Beardslee, J., Miltimore, S., Fine, A., Frick, P. J., Steinberg, L., & Cauffman, E. (2019). Under the radar or under arrest: How is adolescent boys' first contact with the juvenile justice system related to future offending and arrests? *Law and Human Behavior*, *43*(4), 342–357. https://doi.org/10.1037/lhb0000340

Blader, S. L., & Tyler, T. R. (2003). A four-component model of procedural justice: Defining the meaning of a "fair" process. *Personality and Social Psychology Bulletin*, *29*(6), 747–758. https://doi.org/10.1177/0146167203029006007

Bolger, P. C., & Walters, G. D. (2019). The relationship between police procedural justice, police legitimacy, and people's willingness to cooperate with law enforcement: A meta-analysis. *Journal of Criminal Justice*, *60*, 93–99. https://doi.org/10.1016/j.jcrimjus.2019.01.001

Bottoms, A., & Tankebe, J. (2012). Beyond procedural justice: A dialogic approach to legitimacy in criminal justice. *The Journal of Criminal Law & Criminology*, *102*(1), 119–170.

Bradford, B. (2011). Voice, neutrality and respect: Use of victim support services, procedural fairness and confidence in the criminal justice system. *Criminology & Criminal Justice*, *11*(4), 345–366.

Bradford, B., Jackson, J., & Hough, M. (2013). Police futures and legitimacy: Redefining 'good policing'. In J. M. Brown (Ed.), *The future of policing* (pp. 79–99). Routledge. https://doi.org/10.4324/9780203435946

Bradford, B., Murphy, K., & Jackson, J. (2014). Officers as mirrors: Policing, procedural justice and the (re) production of social identity. *British Journal of Criminology*, *54*(4), 527–550. https://doi.org/10.1093/bjc/azu021

Cabell, J. J., Moody, S. A., & Yang, Y. (2020). Evaluating effects on guilty and innocent suspects: An effect taxonomy of interrogation techniques. *Psychology, Public Policy, and Law*, *26*(2), 154–165. https://doi.org/10.1037/law0000224

Casper, J. D., Tyler, T., & Fisher, B. (2020). Procedural justice in felony cases. *Law & Society Review*, *32*(3), 217–507. https://doi.org/10.2307/3053626

Cauffman, E., Beardslee, J., Fine, A., Frick, P. J., & Steinberg, L. (2021). Crossroads in juvenile justice: The impact of initial processing decision on youth 5 years after first arrest. *Development and Psychopathology*, *33*(2), 700–713. https://doi.org/10.1017/S095457942000200X

Cavanagh, C., Dalzell, E., & Cauffman, E. (2020). Documentation status, neighborhood disorder, and attitudes toward police and courts among Latina immigrants. *Psychology, Public Policy, and Law*, *26*(1), 121–131. https://doi.org/10.1037/law0000221

Cleary, H. (2017). Applying the lessons of developmental psychology to the study of juvenile interrogations: New directions for research, policy, and practice. *Psychology, Public Policy, and Law*, *23*(1), 118–130. https://doi.org/10.1037/law0000120

Cleary, H. M., & Warner, T. C. (2017). Parents' knowledge and attitudes about youths' interrogation rights. *Psychology, Crime & Law*, *23*(8), 777–793. https://doi.org/10.1080/1068316X.2017.1324030

Dunham, R. G., & Petersen, N. (2017). Making Black lives matter: Evidence-based policies for reducing police bias in the use of deadly force. *Criminology & Public Policy*, *16*(1), 341–348. https://doi.org/10.1111/1745-9133.12284

Engel, R. S., McManus, H. D., & Isaza, G. T. (2020). Moving beyond "best practice": Experiences in police reform and a call for evidence to reduce officer-involved shootings. *The Annals of the American Academy of Political and Social Science*, *687*(1), 146–165. https://doi.org/10.1177/0002716219889328

Fagan, J., & Piquero, A. R. (2007). Rational choice and developmental influences on recidivism among adolescent felony offenders. *Journal of Empirical Legal Studies*, *4*(4), 715–748. https://doi.org/10.1111/j.1740-1461.2007.00105.x

Fagan, J., & Tyler, T. R. (2005). Legal socialization of children and adolescents. *Social Justice Research*, *18*(3), 217–241. https://doi.org/10.1007/s11211-005-6823-3

Fine, A., & Cauffman, E. (2015). Race and justice system attitude formation during the transition to adulthood. *Journal of Developmental and Life-Course Criminology*, *1*(4), 325–349. https://doi.org/10.1007/s40865-015-0021-2

Fine, A., Amemiya, J., Frick, P., Steinberg, L., & Cauffman, E. (2021). Perceptions of police Legitimacy and bias from ages 13 to 22 among Black, Latino, and White justice-involved males. *Law and Human Behavior*. *45*(3), 243.

Fine, A., Cavanagh, C., Donley, S., Frick, P. J., Steinberg, L., & Cauffman, E. (2017). Is the effect of justice system attitudes on recidivism stable after youths' first arrest? Race and legal socialization among first-time youth offenders. *Law and Human Behavior*, *41*(2), 146–158. https://doi.org/10.1037/lhb0000229

Fine, A., Cavanagh, C., Donley, S., Steinberg, L., Frick, P. J., & Cauffman, E. (2016). The role of peer arrests on the development of youths' attitudes towards the justice system. *Law and Human Behavior*, *40*(2), 211–218. https://doi.org/10.1037/lhb0000167

Flora, D. B., & Flake, J. K. (2017). The purpose and practice of exploratory and confirmatory factor analysis in psychological research: Decisions for scale development and validation. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences du Comportement*, *49*(2), 78–88. https://doi.org/10.1037/cbs0000069

Fox, B., Moule, R. K., Jr., & Parry, M. M. (2018). Categorically complex: A latent class analysis of public perceptions of police militarization. *Journal of Criminal Justice*, *58*, 33–46. https://doi.org/10.1016/j.jcrimjus.2018.07.002

Gau, J. M. (2011). The convergent and discriminant validity of procedural justice and police legitimacy: An empirical test of core theoretical propositions. *Journal of Criminal Justice*, *39*(6), 489–498. https://doi.org/10.1016/j.jcrimjus.2011.09.004

Gau, J. M. (2014). Procedural justice and police legitimacy: A test of measurement and structure. *American Journal of Criminal Justice*, *39*(2), 187–205. https://doi.org/10.1007/s12103-013-9220-8

Gau, J. M. (2015). Procedural justice, police legitimacy, and legal cynicism: A test for mediation effects. *Police Practice and Research*, *16*(5), 402–415. https://doi.org/10.1080/15614263.2014.927766

Gaub, J. E., & White, M. D. (2020). Open to interpretation: Confronting the challenges of understanding the current state of body-worn camera research. *American Journal of Criminal Justice*, *45*, 899–913. https://doi.org/10.1007/s12103-020-09518-4

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Goff, P. A., Lloyd, T., Geller, A., Raphael, S., & Glaser, J. (2016). *The science of justice: Race, arrests, and police use of force*. Center for Policing Equity.

Gomes, H. S., Farrington, D. P., Maia, A., & Krohn, M. D. (2019). Measurement bias in self-reports of offending: A systematic review of experiments. *Journal of Experimental Criminology*, *15*(3), 313–339. https://doi.org/10.1007/s11292-019-09379-w

Hamm, J. A., D'Annunzio, A. M., Bornstein, B. H., Hoetger, L., & Herian, M. N. (2019). Do body-worn cameras reduce eyewitness cooperation with the police? An experimental inquiry. *Journal of Experimental Criminology*, *15*(4), 685–701. https://doi.org/10.1007/s11292-019-09356-3

Hamm, J. A., Trinkner, R., & Carr, J. D. (2017). Fair process, trust, and cooperation: Moving toward an integrated framework of police legitimacy. *Criminal Justice and Behavior*, *44*(9), 1183–1212. https://doi.org/10.1177/0093854817710058

Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychological Science*, *24*(10), 1918–1927. https://doi.org/10.1177/0956797613480187

Hecker, S. (1996). Race and pretextual traffic stops: An expanded role for civilian review boards. *Columbia Human Rights Law Review*, *28*(3), 551–604.

Hinds, L., & Murphy, K. (2007). Public satisfaction with police: Using procedural justice to improve police legitimacy. *Australian and New Zealand Journal of Criminology*, *40*(1), 27–42. https://doi.org/10.1375/acri.40.1.27

Huizinga, D., Esbensen, F. A., & Weiher, A. W. (1991). Are there multiple paths to delinquency? *The Journal of Criminal Law & Criminology*, *82*, 83–118. https://doi.org/10.2307/1143790

Huq, A. Z., Jackson, J., & Trinkner, R. (2017). Legitimating practices: Revisiting the predicates of police legitimacy. *British Journal of Criminology*, *57*(5), 1101–1122. https://doi.org/10.1093/bjc/azw037

Jackson, J. (2018). Norms, normativity, and the legitimacy of justice institutions: International perspectives. *Annual Review of Law and Social Science*, *14*(1), 145–165. https://doi.org/10.1146/annurev-lawsocsci-110316-113734

Jackson, J., & Bradford, B. (2019). Blurring the distinction between empirical and normative legitimacy? A methodological commentary on 'police legitimacy and citizen cooperation in China'. *Asian Journal of Criminology*, *14*(4), 265–289. https://doi.org/10.1007/s11417-019-09289-w

Jackson, J., & Gau, J. (2015). Carving up concepts? Differentiating between trust and legitimacy in public attitudes towards legal authority. In E. Shockley, T. Neal, L. PytlikZillig, & B. Bornstein (Eds.), *Interdisciplinary perspectives on trust: Towards theoretical and methodological integration* (pp. 49–69). Springer https://doi.org/10.2139/ssrn.2567931

Jackson, J., Huq, A. Z., Bradford, B., & Tyler, T. R. (2013). Monopolizing force? Police legitimacy and public attitudes toward the acceptability of violence. *Psychology, Public Policy, and Law*, *19*(4), 479–497. https://doi.org/10.1037/a0033852

Jonathan-Zamir, T., & Weisburd, D. (2013). The effects of security threats on antecedents of police legitimacy: Findings from a quasi-experiment in Israel. *Journal of Research in Crime and Delinquency*, *50*(1), 3–32. https://doi.org/10.1177/0022427811418002

Kaiser, K., & Reisig, M. D. (2019). Legal socialization and self-reported criminal offending: The role of procedural justice and legal orientations. *Journal of Quantitative Criminology*, *35*(1), 135–154. https://doi.org/10.1007/s10940-017-9375-4

Lee, J. M., Steinberg, L., Piquero, A. R., & Knight, G. P. (2011). Identity-linked perceptions of the police among African American juvenile offenders: A developmental perspective. *Journal of Youth and Adolescence*, *40*(1), 23–37. https://doi.org/10.1007/s10964-010-9553-2

MacCoun, R. (2005). Voice, control, and belonging: The double-edged sword of procedural fairness. *Annual Review of Law and Social Science*, *1*(1), 171–201. https://doi.org/10.1146/annurev.lawsocsci.1.041604.115958

Maguire, E. R., Lowrey, B. V., & Johnson, D. (2017). Evaluating the relative impact of positive and negative encounters with police: A randomized experiment. *Journal of Experimental Criminology*, *13*(3), 367–391. https://doi.org/10.1007/s11292-016-9276-9

Mazerolle, L., Antrobus, E., Cardwell, S. M., Piquero, A. R., & Bennett, S. (2019). Harmonizing legal socialization to reduce antisocial behavior: Results from a randomized field trial of truanting young people. *Justice Quarterly*, *38*(1), 28. https://doi.org/10.1080/07418825.2019.1618894

Mazerolle, L., Bennett, S., Antrobus, E., & Eggins, E. (2012). Procedural justice, routine encounters and citizen perceptions of police: Main findings from the Queensland Community Engagement Trial (QCET). *Journal of Experimental Criminology*, *8*(4), 343–367. https://doi.org/10.1007/s11292-012-9160-1

McLean, K., Wolfe, S. E., & Pratt, T. C. (2019). Legitimacy and the life course: An age-graded examination of changes in legitimacy attitudes over time. *Journal of Research in Crime and Delinquency*, *56*(1), 42–83. https://doi.org/10.1177/0022427818793934

Mears, D. P., Craig, M. O., Stewart, E. A., & Warren, P. Y. (2021). Thinking fast, not slow: How cognitive biases may contribute to racial disparities in the use of force in police-citizen encounters. *Journal of Criminal Justice*, *53*, 1–24. https://doi.org/10.1016/j.jcrimjus.2017.09.001

Mindthoff, A., Evans, J. R., Perez, G., Woestehoff, S. A., Olaguez, A. P., Klemfuss, J. Z., Normile, C. J., Scherr, K. C., Carlucci, M. E., Carol, R. N., Meissner, C. A., Michael, S. W., Russano, M. B., Stocks, E. L., Vallano, J. P., & Woody, W. D. (2018). A survey of potential jurors' perceptions of interrogations and confessions. *Psychology, Public Policy, and Law*, *24*(4), 430–448. https://doi.org/10.1037/law0000182

Monahan, K. C., & Piquero, A. R. (2009). Investigating the longitudinal relation between offending frequency and offending variety. *Criminal Justice and Behavior*, *36*(7), 653–673. https://doi.org/10.1177/0093854809335527

Mulvey, E. (2013). *Research on pathways to desistance [Maricopa County, AZ and Philadelphia County, PA]: Subject measures—Scales, 2000-2010 (ICPSR 36800)*. Inter-university Consortium for Political and Social Research [distributor], 2017-12-14. https://doi.org/10.3886/ICPSR36800.v4

Murphy, K., Cherney, A., & Teston, M. (2019). Promoting Muslims' willingness to report terror threats to police: Testing competing theories of procedural justice. *Justice Quarterly*, *36*(4), 594–619. https://doi.org/10.1080/07418825.2018.1437210

Nagin, D. S., & Telep, C. W. (2017). Procedural justice and legal compliance. *Annual Review of Law and Social Science*, *13*(1), 5–28. https://doi.org/10.1146/annurev-lawsocsci-110316-113310

Nivette, A., Eisner, M., & Ribeaud, D. (2019). Evaluating the shared and unique predictors of legal cynicism and police legitimacy from adolescence into early adulthood. *Criminology*, *58*, 70–100. https://doi.org/10.1111/1745-9125.12230

Nix, J., Pickett, J. T., & Wolfe, S. E. (2020). Testing a theoretical model of perceived audience legitimacy: The neglected linkage in the dialogic model of police–community relations. *Journal of Research in Crime and Delinquency*, *57*(2), 217–259. https://doi.org/10.1177/0022427819873957

O'Brien, T. C., & Tyler, T. R. (2020). Authorities and communities: Can authorities shape cooperation with communities on a group level? *Psychology, Public Policy, and Law*, *26*(1), 69–87. https://doi.org/10.1037/law0000202

Osgood, D. W., McMorris, B. J., & Potenza, M. T. (2002). Analyzing multiple-item measures of crime and deviance I: Item response theory scaling. *Journal of Quantitative Criminology*, *18*(3), 267–296. https://doi.org/10.1023/A:1016008004010

Penner, E. K., Viljoen, J. L., Douglas, K. S., & Roesch, R. (2014). Procedural justice versus risk factors for offending: Predicting recidivism in youth. *Law and Human Behavior*, *38*(3), 225–237. https://doi.org/10.1037/lhb0000055

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Pina-Sánchez, J., & Brunton-Smith, I. (2020). Reassessing the relationship between procedural justice and police legitimacy. *Law and Human Behavior*, *44*(5), 377–393. https://doi.org/10.1037/lhb0000424

Piquero, A. R., Fagan, J., Mulvey, E. P., Steinberg, L., & Odgers, C. (2005). Developmental trajectories of legal socialization among serious adolescent offenders. *The Journal of Criminal Law & Criminology*, *96*(1), 267–298.

Posch, K., Jackson, J., Bradford, B., & Macqueen, S. (2020). Truly free consent"? Clarifying the nature of police legitimacy using causal mediation analysis. *Journal of Experimental Criminology*. Advance online publication. https://doi.org/10.1007/s11292-020-09426-x

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Preacher, K. J., Zhang, G., Kim, C., & Mels, G. (2013). Choosing the optimal number of factors in exploratory factor analysis: A model selection perspective. *Multivariate Behavioral Research*, *48*(1), 28–56. https://doi.org/10.1080/00273171.2012.710386

Prenzler, T., & Ronken, C. (2001). Models of police oversight: A critique. *Policing and Society: An International Journal*, *11*(2), 151–180. https://doi.org/10.1080/10439463.2001.9964860

President's Task Force on 21st Century Policing. (2015). *Final report of the President's Task Force on 21st Century Policing*. Office of Community Oriented Police Service, U.S. Department of Justice.

Rebellon, C. J., Manasse, M. E., Van Gundy, K. T., & Cohn, E. S. (2012). Perceived injustice and delinquency: A test of general strain theory. *Journal of Criminal Justice*, *40*(3), 230–237. https://doi.org/10.1016/j.jcrimjus.2012.02.001

Redlich, A. D., Shteynberg, R. V., & Nirider, L. H. (2020). Pragmatic implication in the interrogation room: A comparison of juveniles and adults. *Journal of Experimental Criminology*, *16*(4), 555–564. https://doi.org/10.1007/s11292-019-09377-y

Reisig, M. D. (2007). Procedural justice and community policing: What shapes residents' willingness to participate in crime prevention programs? Policing. *Journal of Policy Practice*, *1*, 356–369. https://doi.org/10.1093/police/pam036

Reisig, M. D., & Lloyd, C. (2009). Procedural justice, police legitimacy, and helping the police fight crime: Results from a survey of Jamaican adolescents. *Police Quarterly*, *12*(1), 42–62. https://doi.org/10.1177/1098611108327311

Reisig, M. D., Bratton, J., & Gertz, M. G. (2007). The construct validity and refinement of process-based policing measures. *Criminal Justice and Behavior*, *34*(8), 1005–1028. https://doi.org/10.1177/0093854807301275

Saunders, J., & Kilmer, B. (2021). Changing the narrative: Police–community partnerships and racial reconciliation. *Justice Quarterly*, *38*(1), 47–71. https://doi.org/10.1080/07418825.2019.1568520

Schubert, C. A., Mulvey, E. P., & Pitzer, L. (2016). Differentiating serious adolescent offenders who exit the justice system from those who do not. *Criminology*, *54*(1), 56–85. https://doi.org/10.1111/1745-9125.12098

Schubert, C. A., Mulvey, E. P., Steinberg, L., Cauffman, E., Losoya, S. H., Hecker, T., Chassin, L., & Knight, G. P. (2004). Operational lessons from the pathways to desistance project. *Youth Violence and Juvenile Justice*, *2*(3), 237–255. https://doi.org/10.1177/1541204004265875

Slobogin, C. (2020). The legality of trickery during interrogation. In Lutz Eidam, Michael Lindemann, & Andreas Ransiek (Eds.), *Interrogation, confession, and truth* (pp. 61–86). Nomos Publishing. https://doi.org/10.5771/9783748904380-6

Solomon, S. J. (2019). How do the components of procedural justice and driver race influence encounter-specific perceptions of police legitimacy during traffic stops? *Criminal Justice and Behavior*, *46*(8), 1200–1216. https://doi.org/10.1177/0093854819859606

Sun, I. Y., Wu, Y., Van Craen, M., & Hsu, K. K. L. (2018). Internal procedural justice, moral alignment, and external procedural justice in democratic policing. *Police Quarterly*, *21*(3), 387–412. https://doi.org/10.1177/1098611118772270

Sunshine, J., & Tyler, T. R. (2015). The role of procedural justice and legitimacy in shaping public support for policing. *Law & Society Review*, *37*(3), 513–548. https://doi.org/10.1111/1540-5893.3703002

Sweeten, G. (2012). Scaling criminal offending. *Journal of Quantitative Criminology*, *28*(3), 533–557. https://doi.org/10.1007/s10940-011-9160-8

Tankebe, J. (2013). Viewing things differently: The dimensions of public perceptions of police legitimacy. *Criminology*, *51*(1), 103–135. https://doi.org/10.1111/j.1745-9125.2012.00291.x

Tankebe, J., Reisig, M. D., & Wang, X. (2016). A multidimensional model of police legitimacy: A cross-cultural assessment. *Law and Human Behavior*, *40*(1), 11–22. https://doi.org/10.1037/lhb0000153

Thornberry, T. P., & Krohn, M. D. (2000). The self-report method for measuring delinquency and crime. In D. Duffee (Ed.), *Criminal justice* (pp. 33–84). National Institute of Justice.

Trinkner, R. (2019). Clarifying the contours of the police legitimacy measurement debate: A response to Cao and Graham. *Asian Journal of Criminology*, *14*(4), 309–335. https://doi.org/10.1007/s11417-019-09300-4

Trinkner, R., & Cohn, E. S. (2014). Putting the "social" back in legal socialization: Procedural justice, legitimacy, and cynicism in legal and nonlegal authorities. *Law and Human Behavior*, *38*(6), 602–617. https://doi.org/10.1037/lhb0000107

Trinkner, R., Jackson, J., & Tyler, T. R. (2018). Bounded authority: Expanding "appropriate" police behavior beyond procedural justice. *Law and Human Behavior*, *42*(3), 280–293. https://doi.org/10.1037/lhb0000285

Trinkner, R., Mays, R. D., Cohn, E. S., Van Gundy, K. T., & Rebellon, C. J. (2019). Turning the corner on procedural justice theory: Exploring reverse causality with an experimental vignette in a longitudinal survey. *Journal of Experimental Criminology*, *15*(4), 661–671. https://doi.org/10.1007/s11292-019-09358-1

Trinkner, R., Rodrigues, H., Piccirillo, D., Gifford, F. E., & Gomes, A. M. M. (2020). Legal socialisation in Brazil: Examining the generalisability of the procedural justice model. *International Journal of Comparative and Applied Criminal Justice*, *44*(1–2), 7–27. https://doi.org/10.1080/01924036.2019.1587710

Trinkner, R., & Tyler, T. R. (2016). Legal socialization: Coercion versus consent in an era of mistrust. *Annual Review of Law and Social Science*, *12*, 417–439. https://doi.org/10.1146/annurev-lawsocsci-110615-085141

Tyler, T. (1997). Procedural fairness and compliance with the law. *Schweizerische Zeitschrift Für Volkswirtschaft Und Statistik*, *133*, 219–240.

Tyler, T. (2006). *Why people obey the law*. Princeton University Press. https://doi.org/10.1515/9781400828609

Tyler, T. (2017). Procedural justice and policing: A rush to judgment? *Annual Review of Law and Social Science*, *13*(1), 29–53. https://doi.org/10.1146/annurev-lawsocsci-110316-113318

Tyler, T., & Huo, Y. (2002). *Trust in the Law: Encouraging public cooperation with the police and courts*. Russell Sage Foundation Foundation.

Tyler, T. R., & Jackson, J. (2013). Future challenges in the study of legitimacy and criminal justice. In J. Tankebe & A. Liebling (Eds.), *Legitimacy and criminal justice: an international exploration* (pp. 83–104). Oxford University Press.

Tyler, T., & Trinkner, R. (2018). *Why children follow rules: Legal socialization and the development of legitimacy*. Oxford University Press.

Walters, G. D. (2018). Procedural justice, legitimacy beliefs, and moral disengagement in emerging adulthood: Explaining continuity and desistance in the moral model of criminal lifestyle development. *Law and Human Behavior*, *42*(1), 37–49. https://doi.org/10.1037/lhb0000266

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Walters, G. D., & Bolger, P. C. (2018). Procedural justice perceptions, legitimacy beliefs, and compliance with the law: A meta-analysis. *Journal of Experimental Criminology*, *15*, 341–372. https://doi.org/10.1007/s11292-018-9338-2

Weber, M. (1978). *Economy and society: An outline of interpretive sociology*. University of California Press.

Wolfe, S. E., Nix, J., Kaminski, R., & Rojek, J. (2016). Is the effect of procedural justice on police legitimacy invariant? Testing the generality of procedural justice and competing antecedents of legitimacy. *Journal of Quantitative Criminology*, *32*(2), 253–282. https://doi.org/10.1007/s10940-015-9263-8

Wood, G., Tyler, T., & Papachristos, A. (2020). Procedural justice training reduces police use of force and complaints against officers. *Proceedings of the National Academy of Sciences of the United States of America*, *117*(18), 9815–9821. https://doi.org/10.1073/pnas.1920671117

Wood, G., Tyler, T., Papachristos, A., Roth, J., & Sant'Anna, P. (2021). Revised findings for "Procedural justice training reduces police use of force and complaints against officers. *SocArXiv xf32m, Center for Open Science*. https://doi.org/10.31219/osf.io/xf32m

Woolard, J. L., Cleary, H. M. D., Harvell, S. A. S., & Chen, R. (2008). Examining adolescents' and their parents' conceptual and practical knowledge of police interrogation: A family dyad approach. *Journal of Youth and Adolescence*, *37*(6), 685–698. https://doi.org/10.1007/s10964-008-9288-5

Zahnow, R., Mazerolle, L., & Pang, A. (2019). Do individual differences matter in the way people view police legitimacy? A partial replication and extension of invariance thesis. *Policing: A Journal of Policy and Practice*. Advance online publication. https://doi.org/10.1093/police/paz066

Received March 4, 2021
Revision received July 20, 2021
Accepted July 21, 2021 ■

E-Mail Notification of Your Latest Issue Online!

Would you like to know when the next issue of your favorite APA journal will be available online? This service is now available to you. Sign up at https://my.apa.org/portal/alerts/ and you will be notified by e-mail when issues of interest to you become available!

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.