

## Does procedural fairness matter for drug abusers to stop illicit drug use? Testing the applicability of the process-based model in a Chinese context

Jianhong Liu, Guangzhen Wu & Francis D. Boateng

To cite this article: Jianhong Liu, Guangzhen Wu & Francis D. Boateng (2019): Does procedural fairness matter for drug abusers to stop illicit drug use? Testing the applicability of the process-based model in a Chinese context, *Psychology, Crime & Law*, DOI: [10.1080/1068316X.2019.1696802](https://doi.org/10.1080/1068316X.2019.1696802)

To link to this article: <https://doi.org/10.1080/1068316X.2019.1696802>



Published online: 03 Dec 2019.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)



# Does procedural fairness matter for drug abusers to stop illicit drug use? Testing the applicability of the process-based model in a Chinese context

Jianhong Liu<sup>a</sup>, Guangzhen Wu<sup>b</sup> and Francis D. Boateng<sup>c</sup>

<sup>a</sup>Department of Sociology, Faculty of Social Sciences, University of Macau, Taipa, Macau, People's Republic of China; <sup>b</sup>Department of Sociology, University of Utah, Salt Lake City, UT, USA; <sup>c</sup>Department of Legal Studies, The University of Mississippi, University, MS, USA

## ABSTRACT

This study examined the influences of procedural fairness on Chinese drug users' efforts to stop substance abuse, with a primary goal to test the applicability of the process-based model in the Chinese context. According to Tyler (1990, *Why people obey the law*. New Haven, CT: Yale University Press), the core theoretical argument underpinning the process-based model is that if citizens consider the police to be fair in using their powers, they will view the police as legitimate and accordingly cooperate with the police and comply with the law. Using data from a sample of 202 Chinese drug users, this study found that procedural fairness has an indirect effect on drug users' efforts to stop illicit drug use. Specifically, procedural fairness used by the police increased Chinese drug users' efforts to stop substance abuse through its prior effects on drug users' perceptions of police trustworthiness. These findings provide some support for the key arguments of the process-based model of regulation, and have important implications for the direction of efforts to encourage desistance-related behavior among substance abusers.

## ARTICLE HISTORY

Received 6 June 2019

Accepted 24 October 2019

## KEYWORDS

Procedural fairness; process-based model; substance abuse; desistance; China

## Introduction

The process-based model of policing, as developed by Tom Tyler (1990), provides a promising theoretical framework for understanding citizens' law-abiding behavior and their cooperation with the police. Recognizing the important influence of normative considerations on individual behavior, the process-based model of policing, also called the procedural justice model of policing (Sun, Wu, Hu, & Farmer, 2017), posits that individuals tend to cooperate with the police and show compliance with the law if they view the police to be legitimate, and their perceptions of police legitimacy are shaped by their judgment about whether the police have behaved in a procedurally just or fair manner in police-citizen encounters (Sunshine & Tyler, 2003; Tyler, 1990). As Sunshine and Tyler (2003) indicated, procedural justice is reflected by quality of decision making (assess if the police are neutral decision-makers whose decision-making process reflect

transparency and objectivity) and quality of interpersonal treatment (assess if the police treat individuals with dignity and respect). Put simply, procedural justice theorists argue that procedural justice/fairness affects citizens' evaluation of police legitimacy, which in turn influences self-regulatory law-related behavior in the future (Sunshine & Tyler, 2003; Tyler, 2006).

In the last three decades, the procedural justice framework has received considerable scholarly attention and has been tested in different settings, including Western developed nations and non-Western developing/transitional nations. While this theoretical framework has found robust support from many empirical studies conducted in Western democracies, research findings based on samples collected from non-Western countries are mixed and do not align well with the theoretical expectations (for example see Kim, Ra, & McLean, 2019; Sun et al., 2017; Tankebe, 2009; Tsushima & Hamai, 2015). This raises questions about the applicability of the procedural justice theory, originally developed within the Western sociopolitical and cultural context, in non-Western societies. For instance, based on a sample collected from Japan, Tsushima and Hamai (2015) found that police legitimacy variables do not predict citizens' cooperation with the police in Japan, which is not in line with the procedural justice model. As Sun et al. (2017) noted, generalizing procedural justice theory to non-Western countries may be problematic, as 'in non-Western, nondemocratic countries where cultures, sociopolitical settings, crime rates, and police systems are different from Western democracies, the dynamics of police-public relations, the formation of police legitimacy, and the influence of procedural justice may be quite distinct' (p. 457).

Additionally, although procedural justice theory has been well examined, there is a limited scholarly attention paid to the theory's effects on special populations such as arrestees and incarcerated populations (for example see Augustyn, 2015; Kaiser & Reisig, 2019; Kim et al., 2019; Tyler, Sherman, Strang, Barnes, & Woods, 2007; Wales, Hiday, & Ray, 2010). A most recent study by Kaiser and Reisig (2019) deserves noting. Using longitudinal data collected from a sample of serious adolescent offenders, Kaiser and Reisig (2019) examined the relationship between procedural justice judgements and criminal offending, while considering the potential mediating effect of police legitimacy. They found that positive procedural justice judgements decrease involvement in criminal offending, and legitimacy mediates the effect of personal procedural justice judgements, which provides support for the key argument of the procedural justice theory. Notwithstanding these small number of studies focusing on special populations, studies examining the applicability of this theory to illicit drug users are almost nonexistent. These limitations in the literature restricts our ability to assess the generalizability of this theory across different populations, and hinder the efforts to identify effective ways to encourage desistance-related behavior on the part of drug users.

Given that prior research has paid limited attention to special populations and has predominantly focused on Western countries, and also given the mixed results from non-Western countries, it is worthwhile to further examine the generalizability of this theory in non-Western and nondemocratic settings. China offers an ideal research site for this purpose, not only because China is the largest developing nation in the world and differs from Western countries in many respects, but also because studies testing procedural justice theory in the Chinese context are very rare (Sun et al., 2017). Therefore, this study is intended to address the knowledge gap by testing procedural justice

theory using a sample of Chinese drug users, and specifically examining whether use of procedural fairness by police influences Chinese drug users' efforts in desisting from substance abuse. In addition, this study also examines if police trustworthiness (a dimension of police legitimacy) mediates the relationship between procedural justice and drug users' desistance efforts. Drawing upon Tyler's process-based model of policing, the following two key hypotheses were made:

- (1) Perceived procedural fairness should have a positive effect on drug abusers' efforts to stop illicit drug use.
- (2) The effect of procedural fairness on drug abusers' desistance effort, if observed, should be mediated by drug abusers' perception of police trustworthiness.

### **Changing behavior: procedural justice and citizen compliance**

In criminological and psychological research, there have been many discussions about how citizens change their attitudes toward authorities and citizens' law-abiding behavior. In policing, for instance, several models have been developed to explain behavioral changes in various policing environments and across different segments of the population (Boateng, 2018; Bouffard & Piquero, 2008; Sunshine & Tyler, 2003). In this study, we applied the process-based model, often referred to as procedural justice theory, to explain behavioral changes among a unique segment of the Chinese population – drug users. For the past few decades, procedural justice has become the 'go-to' theory for answers pertaining to citizens' behavior toward the police and compliance with the law. Few may doubt the theory's efficacy; procedural justice has been widely tested and found to have empirical validity in explaining behavioral patterns in policing (Boateng, 2018; Bouffard & Piquero, 2010; Tyler, 1990, 2000). The main assumption of this theory is that fairness applied by the police in encounters with citizens and decisions on the street will result in positive behavioral outcomes such as cooperating and complying with police orders, willingness on the part of citizens to say something when they see something illegal, and self-regulatory law-related behavior in the future (Gau, 2011; Murphy, Tyler, & Curtis, 2009; Sunshine & Tyler, 2003; Tyler, 2006). Others have gone beyond behavioral changes to talk about functional aspects of policing, arguing that engagement in procedurally just practices undeniably makes the police more effective in controlling crime and performing other duties (Gau, Corsaro, Stewart, & Brunson, 2012; Hough, Jackson, Bradford, Myhill, & Quinton, 2010).

Before Tyler, there were scholars that contributed significantly to the development of procedural justice theory (see Thibaut & Walker, 1975). However, in recent times, Tyler's work on procedural justice and its application in policing has been widely recognized. Tyler (1990) believed that processes used in arriving at a decision are more important in shaping attitudes and behaviors than just the outcome of the decision. This argument, which has been supported by other scholars (Gau et al., 2012) simply implies that fair treatment weighs more heavily in citizens' assessments of the police than the outcome of an encounter. To build positive relationships, the police must treat everyone fairly (Tyler, 2004). In discussing factors associated with procedural fairness, Tyler (2000) identified four elements linked to citizens' views about procedural justice practices in police departments: opportunities for participation, neutrality of the forum, trustworthiness of the

authority, and the degree to which people are treated with dignity and respect. People feel they are treated fairly when they are allowed to participate in the process of identifying the best courses of action to address their own problems or conflicts. Participation in policing matters, especially ones that directly affect the individuals and their neighborhoods, is a major consideration in whether the police are fair or not. A test of this participatory assumption has yielded positive effects of citizens' participation in the decision-making process in various institutional settings (Heinz & Kerstetter, 1979; Houlden, 1980; Kitmann & Emery, 1993; Shapiro & Brett, 1993). These and other studies have shown that when people are offered the chance to participate in the process and communicate their views about situations to the legal authorities, they are more likely to consider the procedure satisfying and perceive themselves to have been treated fairly (Fitzgerald, Hough, Joseph, & Quershi, 2002; Paternoster, Bachman, Brame, & Sherman, 1997).

Trustworthiness of authorities and treatment with dignity and respect are two other factors that Tyler believes to be linked to people's views about procedural fairness. In terms of trustworthiness of authorities, Tyler (2000) noted that it is linked to people's assessment of the motives of the third-party authority in charge of resolving cases: 'People recognize that third parties typically have considerable discretion to implement formal procedures in varying ways, and they are concerned about the motivation underlying the decisions made by the authority with which they are dealing' (p. 6). He further added that citizens evaluate whether authorities are benevolent and caring, are interested in their predicaments, and care about their individual needs. Individuals who judge authorities favorably on all these elements tend to think that authorities are trustworthy. During interaction with authorities, individuals are very concerned about their dignity and want that to be recognized and acknowledged.

Procedural justice researchers have empirically tested the key assumptions of the theory and mostly found consistent results across studies. One consistent observation is that perception of an institution's legitimacy is related to individuals' satisfaction with the procedural justice aspects of their encounters with that institution (Cheurprakobkit & Bartsch, 2001; Gau et al., 2012; Mazerolle, Antrobus, Bennett, & Tyler, 2013; Mazerolle, Bennett, Antrobus, & Eggins, 2012; Mazerolle, Bennett, Davis, Sargeant, & Manning, 2013; Murphy, 2005; Tyler & Lind, 1992, 2001). When people are treated fairly, they tend to be more satisfied with authorities than when they are unfairly treated. Mikula, Petri, and Tanzer (1990) observed that their study participants referred to how people were treated in encounters. This echoes Tyler's (1990) argument that perceptions of the legitimacy of authority are influenced by justice-based judgments, which are based on the fairness of procedures used. Based on this line of reasoning, public support for legal authorities and compliance and cooperation with them are determined largely by the public's subjective judgments about the fairness of procedures through which institutions such as the police and the courts exercise their authority.

Using an Australian sample to test the effect of procedural justice on people's views about police legitimacy, Hinds and Murphy (2007) found that procedural justice practices predicted people's satisfaction with the police. Similarly, Gau et al. (2012) found that procedural justice was a strong predictor of legitimacy even when other macro-level effects were considered in the model. This suggests that individuals who live in communities with high rates of unemployment and poverty will view the police as legitimate if they consider the police to employ procedural justice principles when exercising their authority.

These findings were supported by three separate studies conducted by Mazerolle and colleagues in 2012 and 2013. A study conducted by Mazerolle et al. (2013) also found that procedurally just traffic encounters with the police shaped citizens' views about the actual encounter. This observation further demonstrates the importance of procedural justice in shaping citizens' global and specific perceptions of the police.

Notably, prior research also suggests that procedural justice encourages citizens' self-regulatory behavior and their long-term compliance with the law (Liu & Liu, 2018; Sun-shine & Tyler, 2003; Tyler & Fagan, 2008). As Reisig and Lloyd (2009) reasoned, individuals receiving procedural fair treatment by the police are 'more likely to internalize social norms and values consistent with the concept of legitimacy, such as a sense of obligation to defer to police authority during encounters' (p. 44). These normative values and attitudes would in turn motivate self-regulatory behavior. Tyler and Huo (2002) also noted that 'to the extent that people have willingly accepted authorities' decisions, their motivation to continue abiding by these decisions in the future is greater' (p. 205). Essentially, these arguments reflect the notion that citizens' experiences of procedural justice by the police activate moral values that guide them in their future behavior and promote voluntary deference to the law (Tyler, 2004; Tyler & Blader, 2005). The observations in these studies are highly relevant to the current study, as it examines the impact of procedural fairness on drug users' efforts to stop illicit drug use, which essentially reflects not only their cooperation with the police but also their compliance with the law.

In procedural justice research, police legitimacy, police trustworthiness, and citizen's compliance to police demands/with the law are the major constructs that have been examined as to their relationships with procedural justice/fairness. Studies have consistently found citizens' perceptions of procedural fairness shape their trust in police (Murphy, Mazerolle, & Bennett, 2014; Nix, Wolfe, Rojek, & Kaminski, 2015; Tyler, 2005), and police trustworthiness influences citizens' cooperation with the police and their participation in law-abiding behavior (Tankebe, 2009; Tyler & Jackson, 2014). Notably, scholars have observed a mediating effect of police legitimacy on the association between procedural justice/fairness and citizens' cooperation and compliance (Cherney & Murphy, 2013; Madon, Murphy, & Cherney, 2016). For instance, in their 2016 study based on a sample of 800 Australian Muslims, Madon et al. (2016) found that perceptions of police legitimacy partially mediate the effect of procedural justice on cooperation. Similarly, a previous study by Cherney and Murphy (2013) also found a mediating role of perceptions of police legitimacy in the relationship between procedural justice and cooperation with the police. In examining procedural justice issues in Ghana, Tankebe (2009) found that although procedural fairness predicted citizens' cooperation with the police at first, its impact diminished when citizens' judgement of police trustworthiness was added into the model. Tankebe further concluded that police trustworthiness plays a larger role in influencing citizen's cooperation with the police than procedural fairness in the context of Ghana. However, the author did not indicate that this finding suggests a mediating effect of police trustworthiness on the relationship between procedural fairness and public cooperation with the police.

Although procedural justice and its propositions have been widely tested and supported, there are some hindrances to its global appeal. The first is the criticism that the assumptions of procedural justice are not applicable in all social contexts. Those who hold this viewpoint have favored the instrumental-based perspective of explaining

citizens' behavior toward the police (Jackson, Asif, Bradford, & Zakria Zakar, 2014; Tankebe, 2009). These scholars believe that police effectiveness in performing their duties has the greatest impact on public evaluation of the police. For example, Tankebe (2009) noted that police effectiveness in Ghana is a more significant concern to Ghanaians than procedural justice practices. Also, using a Pakistani sample, Jackson et al. (2014) concluded that police ability to control crime is more important in influencing attitudes than procedural justice. In China, Sun et al. (2017) equally found that police effectiveness is the strongest predictor of citizens' views about police legitimacy. These observations question the notion that fair treatment of citizens is paramount to favorable perceptions of the police and citizens' compliance behavior.

Another issue with the current procedural justice literature is that most of the studies have predominantly focused on the Western world, with minimal scholarly attention paid to non-Western and postcolonial societies, which experience a host of problems ranging from governmental ineffectiveness to excessive and arbitrary police use of force and institutional corruption. The few studies that have explored the effect of procedural justice in promoting favorable attitudes and self-regulatory law-related behavior in these contexts have made inconsistent observations, with some offering credence to the procedural justice hypothesis (Akinlabi, 2017; Davies, Meliala, & Buttle, 2016; Kochel, Parks, & Mastrofski, 2013; Reisig & Lloyd, 2009), while others have critically questioned the influence of procedural justice in shaping attitudes toward the police and law-abiding behavior (Jackson et al., 2014). In a recent study conducted using a sample of secondary school students in Nigeria, Akinlabi (2017) observed a significant influence of procedural justice in promoting favorable perceptions of legitimacy, suggesting that if young people perceive the Nigerian police to be fair and engage in procedurally just practices, they tend to believe the institution is legitimate. Moreover, Liu and Liu (2018) analyzed a school-based sample from China and found that procedural justice influenced youth support for the police, which subsequently predicted their compliance levels with the law. A similar observation was made by Reisig and Lloyd (2009) when studying behavior and attitudes toward the Jamaican police. According to these authors, Jamaicans who reported favorable perceptions of procedural justice were also willing to work with the police to fight crime. Moreover, in an ethnographic study of policing in Indonesia, Davies et al. (2016) argued that citizens' assessments of the police are influenced more by their views about procedural justice than by instrumental concerns such as performance. These limited studies in non-Western contexts demonstrate the utility of procedural justice practices in enhancing attitudes toward the police and citizens' law-abiding behavior, which offers insights for police reform.

## Research question

A review of literature suggests that although procedural justice theory has received intensive examination over the last few decades, most prior studies focus on its relevance to the general public's law-abiding behavior and cooperation with the police. As such, this theory's applicability to drug users' law-related behavior remains largely unknown. This is particularly true for explaining drug users' desistance-related behavior (desistance/abstinence is essentially a law-abiding behavior), as scholarly efforts devoted to this purpose are almost nonexistent. Given that illicit drug use is a relapse-prone behavior (Liu,



Wang, Chui, & Cao, 2018), it is worthwhile to examine the role of procedural fairness used by police in how drug users deal with their illicit drug use issues. Therefore, drawing on the extant research, the current study was intended to address the following two questions: First, does procedural fairness by police influence drug users' efforts in desisting from illicit drug use? Second, is the influence of procedural fairness, if any, on drug users' efforts in desisting from substance abuse mediated by police trustworthiness?

## Method

### Participants

Data for this study were collected from a Chinese compulsory drug treatment center in a province in September 2014. According to China's Anti-Drug Law of 2007, Chinese drug abusers would be sent by the public security police agencies (at the county level or above) to these compulsory drug treatment centers if they do one of the following: refuse drug addiction treatment in the community; use illicit drugs during the period of drug addiction treatment in the community; seriously violate the agreement on drug addiction treatment in the community; or use illicit drugs after drug addiction treatment in the community or after compulsory drug treatment. A public security police department may also decide to send a substance abuser to a compulsory drug treatment center if they determine the individual is seriously addicted and is unlikely to be cured through treatment in the community. The compulsory treatment may last up to two years. However, it can be shortened if an individual shows success in desistance in the center, and it can also be extended to three years based on an unfavorable evaluation of an individual's progress in desistance. After their completion of the compulsory drug treatment, the (ex-) drug users would either be simply released from the center, or be ordered by the police agency to continue their drug treatment in the community for no more than three years.

During the period when the study was conducted, the center had seven groups of residents (called 'students' at the center). These residents were randomly assigned into the seven groups when they were accepted to the center. Before the survey was conducted, the research team obtained permission from the treatment center and was able to distribute paper questionnaires to the sixth group, which consisted of 204 residents. The research team informed the participants that their participation was voluntary, in that they could decide whether or not to participate and they could also refuse to answer any questions in the survey. In the end, 202 copies of the survey were collected, yielding a 99% response rate.

### Measures

The dependent variable (DV) in this study was drug users' *efforts to stop illicit drug use*, which was measured by six items. Specifically, a 4-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*) was used to measure respondents' agreement with such statements as: 'Rather than just thinking about quitting illicit drug use, I have already taken actions to desist from illicit drug use', 'To quit illicit drug use, I have begun to make a change', 'I have recognized that illicit drug use is a serious problem', 'I am making efforts in dealing with drug addiction', and 'I am actively cooperating with the staff in the Center to address my substance abuse problem'. With a Cronbach's



alpha coefficient of .78, the scale showed good internal consistency. Accordingly, a composite measure was created for the DV of *efforts to stop illicit drug use*.

The independent variable (IV), *procedural fairness*, was measured by six items concerning how respondents were treated by police officers in the center: 'The police use procedures that are fair to everyone', 'The police take account of the needs and concerns of drug users, and provide assistance accordingly', 'The police treat drug users in a professional and police manner', 'The police treat everyone equally', 'The police clearly explain the reasons for their actions', and 'The police give people the chance to express their views before making decisions'. The answers fell on a 4-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). With an alpha coefficient of .79, these six items were combined to form a composite index of *procedural fairness*.

Based on procedural justice theory, we also included such variables as *police trustworthiness* (reflecting police legitimacy), and variables related to instrumental judgment in our models. These variables were commonly considered in previous research testing the procedural justice model (Tankebe, 2009). The survey also considered *distributive fairness* (one dimension of procedural justice) and *obligation to obey* (one dimension of police legitimacy), the two concepts that are frequently examined in procedural justice related studies. However, in this study, the two concepts were measured by a single question each. Specifically, for *distributive fairness*, it was measured by a single item asking about respondents' agreement with the following statement: 'The outcomes people receive from the police are what they deserve under the law'. The responses ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). For *obligation to obey*, it was measured by a single item that asked respondents to indicate their agreement with the following statement: 'I would accept the decisions made by the police even if I think those decisions are mistaken'. The response options also ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). In developing models, we have also included these two single item measures, and found none of them were significant predictors of the DV. Also, with the addition of these two measures, the results for other variables were substantively similar to that when these two single item measures were not included. Given reliability issues associated with single item measures, these two variables were removed from the final models. The results with addition of these variables are available upon request.

For *Police trustworthiness*, it was measured by four items: 'The police are honest', 'The police deserve respect from citizens', 'The police should be thanked for their work', and 'The police did good work in protecting drug users' basic rights'. The answers fell on a 4-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). With an alpha coefficient of .78, these five items were combined to create a composite index of *trustworthiness*.

Four variables were used in this study to capture instrumental judgment: *police effectiveness*, *risk assessment*, *corruption experience*, and *outcome favorability*. Three items were utilized to measure police effectiveness: 'Do you think the anti-drug approach used by the police is effective?' (responses including *very ineffective*-1, *ineffective*-2, *average*-3, *effective*-4, and *very effective*-5), 'Do you think the police would be more effective in controlling illicit drug use in the future?' (responses including *would be worse in effectiveness*-1, *would be as ineffective as today*-2, *would be as effective as today*-3, and *would be more effective*-4), and 'How likely do you think the police can control illicit drug use on their own?' (responses including *unlikely*-1, *likely*-2, and *very likely*-3).

With an alpha coefficient of .62, these three items were summed to form a composite measure of *police effectiveness*. The variable of *risk assessment* was measured by three items asking about respondents' likelihood of being arrested by police for law violations: 'How likely would you be arrested by police if you use illicit drug again?', 'How likely would you be arrested by police if you commit property crime, e.g. theft?', and 'How likely would you be arrested by police if you commit violent crime, e.g. robbery?'. The responses fell on a 4-point Likert-type scale ranging from 1 (*very unlikely*) to 4 (*very likely*). With an alpha coefficient of .83, a composite measure was created for the variable of *risk assessment*.

*Corruption experience* was measured by four items: 'The police that I have interacted with before are very corrupt', 'Based on my experience, the police would refuse to investigate, arrest, charge, or prosecute certain individuals because they are related to a police officer', 'Based on my experience, what the police actually do doesn't reflect what they have said', and 'Based on my experience, the police would refuse to investigate, arrest, charge, or prosecute certain individuals because they are in power'. The responses ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). With an alpha coefficient of .80, these four items were combined to create a composite index of *corruption experience*. Regarding *outcome favorability*, it was measured by a single item: 'How satisfied are you with the results of the case associated with your most recent arrest by the police?' The responses ranged from 1 (*very dissatisfied*) to 4 (*very satisfied*).

In addition, four variables including *age*, *education*, *victimization experience*, and *registered rural/urban resident* were included in the analyses to account for their potential effects on the DV. Specifically, age was a continuous variable measured by a single question asking respondents' year of birth (subtracting the year of birth from the year of the survey). For *education*, respondents were asked to indicate their education levels by selecting one of the response options ranging from *no schooling completed* to *master's degree or above*. Considering cell size issues, this variable was recoded dichotomously reflecting two levels of education – *elementary school or below* (coded as '0') and *middle school or above* (coded as '1'). *Victimization experience* was measured by five items asking respondents to indicate if, within the one year period before compulsory treatment, they have experienced the following incidents: your own or your family members' bike (including electric bike) was stolen; someone attempted to break into your home to steal something; you were robbed; you were victim of theft occurring in a public area; you were deceived to use illicit drug (you were not told it was illicit drug). This variable was dichotomously coded, with '1' for experiencing one or more of these listed incidents and '0' for not experiencing any of these incidents.

Table 1 reports descriptive statistics for all variables included in the regression analysis.

### **Data analysis plan**

As one focus of this study is to examine the relationship between procedural fairness, police trustworthiness, and drug users' desistance-related effort, it is necessary to first determine that procedural fairness and police trustworthiness, as measured in this study, are two distinct constructs. This procedure is needed given the evidence that sometimes the items supposed to measure these two different variables load on the same construct (see. Gau, 2011). To that end, principle component analysis (PCA) was performed to check the factor loadings of the items used in this study to measure these two variables.

**Table 1.** Univariate Descriptive Statistics ( $N = 202$ ).

Variables	%/Mean (SD)	Range	$\alpha$
Efforts to Stop Illicit Drug Use	13.53 (3.42)	0–28	.78
Procedural Fairness	17.16 (3.41)	8–29	.75
Age	33.62 (5.67)	20–49	-
Education		0–1	-
Elementary School or below	53.80		
Middle School or above	46.20		
Victimization Experience		0–1	-
Yes	68.30		
No	31.70		
Household Registration		0–1	-
Rural	81.40		
Urban	18.60		
<i>Legitimacy</i>			
Trustworthiness	10.70 (2.68)	5–20	.80
<i>Instrumental Judgement</i>			
Effectiveness	8.78 (2.55)	4–16	.62
Risk Assessment	4.89 (2.27)	0–12	.83
Corruption Experience	10.12 (2.70)	4–16	.80
Outcome Favorability	2.27 (.89)	1–4	-

Note. SD = standard deviation;  $\alpha$  = Cronbach's alpha.

Built upon the results of the factor analysis suggesting procedural fairness and police trustworthiness are two distinct variables, a series of multivariate analyses were conducted to explore the influence of IV on DV, and the potential mediating effect of police trustworthiness. Specifically, as the DV, *efforts to stop illicit drug use*, is a composite measure (continuous), Ordinary Least Squares regression (OLS) was used to analyze the influence of procedural justice on drug users' desistance-related behavior. We used a two-step process to estimate the effects on the dependent variable. In the first model, we only included *procedural fairness* and several control variables such as *age*, *education*, *rural household registration*, and *victimization*. This allowed us to see the influence of *procedural fairness* on the dependent variable in controlling for the effects of these sociodemographic characteristics. In the second model, *police trustworthiness* and variables related to instrumental judgment including *police effectiveness*, *risk assessment*, *corruption experience*, and *outcome favorability* were incorporated into the analysis. This full model not only revealed the relative influences of variables of different levels on desistance-related behavior, but also allowed us to see any changes in the effects of the IV, *procedural fairness*, with these added variables.

In addition, this study was intended to examine the potential mediating effect of police legitimacy, as reflected in this study by *police trustworthiness* on the relationship between procedural fairness and desistance-related effort. To that end, a mediation analysis following Baron and Kenny's (1986) procedure and a Sobel test were conducted to determine if a mediation effect existed. Baron and Kenny (1986)'s approach in testing mediation involves four steps. In step 1, the independent variable (IV) must be correlated with the dependent variable (DV). In step 2, the IV must be correlated with the hypothesized mediator. In step 3, the hypothesized mediator must be correlated with the DV, in controlling the effect of the IV on the DV. In step 4, in controlling the effect of the hypothesized mediator on the DV, if the IV is no longer significant predictor of the DV, then a complete mediation is detected; if the correlation between the IV and DV is substantially reduced (a Sobel test can determine if the reduction is significant), then a partial mediation is detected.

## Results

Table 2 provides the Pearson's  $r$  coefficients for the variables used in the study. As shown in Table 2, *procedural fairness* was positively correlated with desistance-related effort ( $r = .27, p < .01$ ). An increase in drug users' perception of procedural fairness by the police was associated with an increase in their efforts in desisting from illicit drug use. Among other variables, *age* ( $r = .20, p < .01$ ), *education* ( $r = .18, p < .05$ ), *trustworthiness* ( $r = .28, p < .01$ ), and *risk assessment* ( $r = .18, p < .05$ ) had a positive correlation with *desistance-related efforts*, suggesting that drug users who were older, had higher educational levels, viewed the police as more trustworthy, and/or estimated a higher chance of being arrested by police when committing illegal acts tended to put more effort toward abstinence. However, the two variables regarding *victimization* experience ( $r = -.18, p < .05$ ) and *registered rural resident* ( $r = -.21, p < .05$ ) were negatively correlated with desistance-related effort, meaning that drug users who were registered as rural residents and/or had experience of victimization tended to put less effort toward abstinence. Given that researchers have commonly used the correlation coefficient of .70 between two predictor variables as the threshold in determining possible multicollinearity issues (Tabachnick, Fidell, & Ullman, 2007), the results of the bivariate analysis show no issues of multicollinearity for multivariate analyses.

Although the correlation coefficient between procedural fairness and police trustworthiness is below .70, it is still relatively high (.66). As aforementioned, there is a concern that these two measures may reflect the same construct. To address this issue, factor analysis was conducted on the 10 items used to measure these two variables. Based on the rule of eigenvalues greater than 1.0, two factors emerged that explained approximately 57 percent of the total variance. Table 3 shows the rotated factor matrix. As expected, the six items used to measure procedural fairness loaded together (factor loadings ranging from .51 to .77), and so did the four items used to measure police trustworthiness (factor loadings ranging from .52 to .88). The results of the factor analysis suggested procedural fairness and police trustworthiness were two distinct variables in the study. Given the significant correlations between procedural fairness and desistance-related effort, between procedural fairness and trustworthiness, and between trustworthiness and desistance-related effort, the conditions for conducting a mediation analysis in which trustworthiness was the hypothetical mediator in the relationship between procedural fairness and desistance-related effort were met.

Table 4 presents the results of multivariate analyses on *efforts to stop illicit drug use*. As the scores of tolerance and VIF suggest, there is no issue of multicollinearity. The results from Model 1 show that procedural fairness had a significant and positive relationship with desistance-related effort ( $p < .05$ ). That is, the more drug users perceived the police as being procedurally fair, the more effort they would make in desisting from illicit drug use. In addition, two control variables, *victimization* ( $p < .05$ ) and *registered rural resident* ( $p < .05$ ), were found to be significant predictors of desistance-related effort. Specifically, drug users who had victimization experience tended to put more effort toward desisting from substance abuse, as did drug users registered as rural residents. Overall, variables included in Model 1 explained approximately 18% of the variance in the DV.

According to the results from Model 2, the newly added variable *police trustworthiness* showed a salient influence on drug users' desistance-related efforts ( $p < .05$ ). The positive

**Table 2.** Bivariate Correlations of Variables Used in the Study ( $N = 202$ ).

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Desistance Effort	1.00										
2. Procedural Fairness	.27**	1.00									
3. Age	.20**	.05	1.00								
4. Education	.18*	.09	-.06	1.00							
5. Victimization	-.18*	-.09	-.01	-.09	1.00						
6. Rural Residents	-.21*	-.01	-.22**	-.08	.16*	1.00					
7. Trustworthiness	.28**	.66**	.13*	.03	-.03	-.01	1.00				
8. Effectiveness	.07	.53**	.14	-.08	.06	.02	.47**	1.00			
9. Risk Assessment	.18*	.21**	.04	.14	-.06	-.08	.18*	.11	1.00		
10. Corruption	-.01	-.05	-.01	-.08	.03	-.11	-.03	-.07	-.12	1.00	
11. Outcome Favorability	.02	.40**	.11	.06	.09	.01	.35**	.46**	.25**	-.02	1.00

Note. \* $p < .05$ . \*\* $p < .01$ .

**Table 3.** Varimax Rotated Factor Matrix for Procedural Fairness and Police Trustworthiness Items ( $N = 202$ ).

Factors	Factor Loadings	
	Factor 1	Factor 2
<b>Factor 1 – Procedural Fairness</b>		
1. The police use procedures that are fair to everyone	.65	
2. The police take account of the needs and concerns of drug users, and provide assistance accordingly	.77	
3. The police treat drug users in a professional and polite manner	.62	
4. The police treat everyone equally	.58	
5. The police clearly explain the reasons for their actions	.51	
6. The police give people the chance to express their views before making decisions	.77	
<b>Factor 2 – Police Trustworthiness</b>		
1. The police are honest		.52
2. The police deserve respect from citizens		.88
3. The police should be thanked for their work		.64
4. The police did good work in protecting drug users' basic rights		.78
Eigenvalues	4.56	1.11
Variance explained	46%	11%
Cronbach's $\alpha$	.79	.78

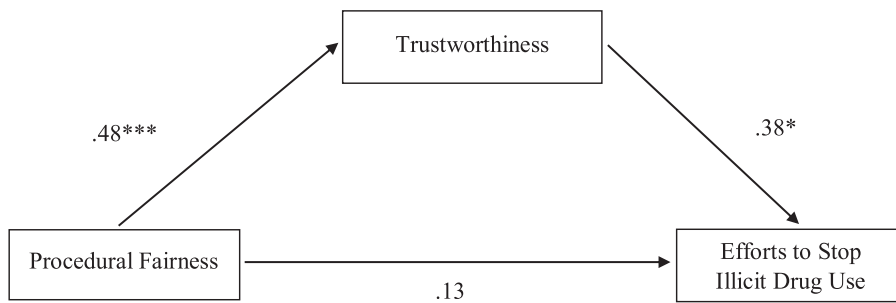
Note. Varimax rotation with Kaiser Normalization. Factors extracted using principal component analysis.

**Table 4.** Linear Regression of Efforts to Stop Illicit Drug Use ( $N = 202$ ).

Predictors	Model 1				Model 2			
	$b(SE)$	$t$	Tolerance	VIF	$b(SE)$	$t$	Tolerance	VIF
Procedural Fairness	.24(.09)	2.47*	.95	1.06	.12(.14)	.86	.42	2.36
Age	.09(.05)	1.83†	.96	1.04	.08(.05)	1.78†	.92	1.08
Education	.88(.57)	1.55	.95	1.06	.73(.57)	1.27	.90	1.11
Victimization	−1.19(.59)	−2.02*	.98	1.02	−1.03(.59)	−1.76†	.95	1.05
Registered Rural Resident	−1.69(.71)	−2.38*	.95	1.06	−1.82(.71)	−2.58*	.92	1.08
<i>Legitimacy</i>								
Trustworthiness					.34(.16)	2.14*	.53	1.90
<i>Instrumental Judgement</i>								
Effectiveness					−.05(.14)	−.38	.60	1.67
Risk Assessment					.22(.13)	1.67†	.87	1.15
Corruption Experience					−.09(.10)	−.99	.94	1.07
Outcome Favorability					−.60(.37)	−1.64	.66	1.51
<i>Model Fit</i>								
$F$		5.75***				3.89***		
$R^2$		.18				.23		

Note. † $p < .1$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

relationship suggested that an increase in drug users' evaluation of police trustworthiness was associated with an increase in their efforts to desist from illicit drug use. Notably, the results from Model 2 showed a substantial reduction in the coefficient of procedural fairness. That is, with the addition of the variable *police trustworthiness*, *procedural fairness* was no longer a significant predictor of the dependent variable, suggesting a potential mediating effect of *police trustworthiness* on the relationship between *procedural fairness* and drug users' desistance-related effort. For the two control variables that were significant in Model 1, while *registered rural resident* remained significant in Model 2 ( $p < .05$ ), the effect of *victimization's* reduced to be marginally significant. The results of Model 2 showed that the instrument variables had little influence on drug users' efforts to desist, as manifested by the fact that none of the four variables – *effectiveness*, *risk assessment*, *corruption experience*, and *outcome favorability* – reached the threshold of statistical



**Figure 1.** Mediation Analysis Results. Note.  $N = 202$ . Indirect Effect = .19,  $SE = .09$ ,  $CI [0.01, 0.36]$ . \* $p < .05$ . \*\*\* $p < .001$ . Sobel Test:  $z = 2.22$ ,  $p < .05$ .

significance at the .05 level (only the variable *risk assessment* was marginally significant). Overall, Model 2 displayed a good model fit, with variables included in the model explaining approximately 23% of the variance in the DV.

To further explore the mediating effect, we adopted the approach developed by Baron and Kenny (1986) which consists of four steps in testing mediation. The statistical software we used to conduct the mediation analysis is version 3 of PROCESS developed by Andrew F. Hayes. The results are as follows. In Step 1 of the mediation model, the regression of *efforts to stop illicit drug use* on *procedural fairness*, ignoring the mediator, was significant,  $b = .31$ ,  $p < .05$ . Step 2 suggests that the regression of *trustworthiness* (mediator) on *procedural fairness* was also significant,  $b = .48$ ,  $p < .001$ . Step 3 of the mediation process indicated that the mediator *trustworthiness*, controlling for the influence of *procedural fairness*, was significant predictor of *efforts to stop illicit drug use*,  $b = .38$ ,  $p < .05$ . Step 4 showed that, controlling for the mediator *trustworthiness*, *procedural fairness* was no longer significant in predicting *efforts to stop illicit drug use*, suggesting a full mediating effect of *police trustworthiness*. In addition, a Sobel test was conducted, and the results provided further support for the significant mediating effect ( $z = 2.22$ ,  $p < .05$ ) Figure 1.

## Discussion

This study advanced our understanding of the impact of procedural fairness on drug users' behavior related to stopping illicit drug use. Given the very limited research on the applicability of the process-based model to substance abuse, this study adds to the literature by expanding procedural justice studies to a unique population – substance abusers – and specifically exploring the influence of procedural fairness on desistance-related behavior within the context of China. This study reveals that procedural fairness does matter in shaping Chinese drug users' behavior, in that it motivates drug users to make more efforts to stop their illicit drug use. However, the role of perceived trustworthiness of the police is noteworthy. As the results suggest, procedural fairness can only influence drug users' behavior toward desistance through its prior effects on police trustworthiness.

This study's finding on the impact of procedural fairness is consistent with most previous research, which has commonly found that citizens' perceptions of procedural justice used by the police have a positive relationship to their cooperation with the police and their law-abiding behavior (Reisig & Lloyd, 2009; Sunshine & Tyler, 2003). As procedural justice theorists have reasoned, procedural fairness encourages individuals'



feelings of responsibility and leads them to create and maintain internal values that support voluntary cooperative and law-abiding behavior (Tyler, 2000; Tyler & Huo, 2002). This study suggests that the relevance of procedural fairness to citizens' compliance also applies to substance abusers. However, it should be noted that the effect of procedural fairness on drug users' desistance-related behavior is fully mediated by perceptions of police trustworthiness – one dimension of police legitimacy. This means that drug users increase their efforts to desist from illicit drug use if they perceive the police to be trustworthy, which is a function of their procedural fairness judgment. Indeed, this finding is in line with procedural justice theory that highlights the role of perceived legitimacy in the relationship between procedural justice and compliance with the law. Specifically, as the theory posits, when citizens perceive the police as procedurally fair, they consider the police legitimate or trustworthy, and this perception of legitimacy leads to subsequent law-abiding behavior (Tyler & Huo, 2002). The salient effects of police trustworthiness on drug users' behavior, as evidenced by this study, also echo the results of prior studies that have detected a strong influence of trustworthiness on citizens' cooperation with the police (Reisig, Bratton, & Gertz, 2007; Tankebe, 2009).

Interestingly, all four variables related to instrumental judgment – effectiveness, risk assessment, corruption experience, and outcome favorability – were found to be unrelated to drug users' efforts to desist. This finding stands out, as it not only contrasts with the results of most studies conducted in Western countries, but also runs against the findings of studies examining procedural justice-related issues in non-Western countries, such as Ghana and even China. Although studies in Western democracies have generally suggested that police effectiveness, as a variable reflecting utilitarian concerns, has a relatively weaker influence on police legitimacy and citizens' compliance behavior than procedural justice/fairness, effectiveness is still commonly found to be a significant predictor (see Jackson & Bradford, 2009; Sunshine & Tyler, 2003; Tyler & Huo, 2002). In studies focusing on non-Western/developing nations, police effectiveness (in fighting crime) was found to be a more salient factor in predicting citizens' cooperation and compliance than normative judgments like procedural fairness (Sun et al., 2017; Tankebe, 2009). Notably, our finding contradicts that of a recent study that examined the relationship between procedural justice and public cooperation in China (Sun et al., 2017), in which the researchers observed that police effectiveness, rather than procedural justice, was the strongest predictor of Chinese residents' perceptions of legitimacy, and it also had a significant indirect effect on public cooperation with the police. Such inconsistencies in research findings on the impact of perceptions of police effectiveness suggest that the influence of utilitarian concerns (e.g. police effectiveness) on citizen compliance may be not only dependent on the differential social contexts (Western/non-Western and developed/developing nations), but also a function of differential populations (the general public or special populations such as drug users and incarcerated population). This finding highlights the importance of testing procedural justice models across cultures and populations.

This study also confirms the findings of prior studies that have detected a negative effect of victimization experience on citizens' confidence in and cooperation with the police (Lai & Zhao, 2010; Ren, Cao, Lovrich, & Gaffney, 2005; Tyler & Boeckmann, 1997). As Van Craen and Skogan (2015) reasoned, victimization experiences make people think that the police did a bad job in protecting them, and hence erode their confidence and

support for the police. The findings of this study suggest that victimization experiences also influence drug users' compliance behavior.

The effects of another control variable – *registered rural/urban resident*, on Chinese substance abusers' efforts to stop illicit drug use deserve noting. The results suggested that drug users registered as rural residents tended to make less effort toward desistance than their urban counterparts. This finding is noteworthy given the fact that illicit drug use has been an increasing problem in China's rural areas in recent years (China News Service, 2015). Although the reason why rural residents put less effort into stopping illicit drug use is still elusive, it might be related to the great rural-urban divide in China that is reflected by rural areas' disadvantages in many social and economic dimensions, including income, education, welfare level, health care, consumption, and housing, among others (Knight, Shi, & Song, 2006), all of which tend to prevent rather than encourage desistance.

This study adds to the literature that profoundly lacks studies exploring the relevance of procedural justice to substance abusers' desistance-related behavior. However, it is not without limitations. First, because the study was an initial attempt to test the process-based model using a sample of Chinese drug users, the data were collected through a convenient sampling approach. Although this approach was necessary considering the explorative nature of the study and the difficulty in recruiting participants from a forced treatment center, we caution generalizing from these results. Second, the data for this study were collected at one time point, meaning that the data were cross-sectional, which does not allow causal inference. Future research needs to use longitudinal data to explore whether a causal relationship can be established between procedural fairness, police trustworthiness, and drug users' desistance-related behavior. Third, as indicated in the discussion, the fact that rural drug users made less effort to stop illicit drug use than their urban counterparts may be a function of a variety of disadvantages associated with the rural context. However, this study lacked variables that reflected these disadvantages. Considering the increasing rates of substance abuse in China's rural areas, future research could add more measures reflecting the rural-urban divide to understand the mechanism that leads to rural-urban disparities in drug users' attitudes and behavior.

## Conclusion

Substance abuse is an increasingly serious problem in China. As the official data suggest, there were approximately 2.95 million registered illicit drug users in 2014, and the real number of drug abusers was estimated to be over 14 million (China National Narcotic Control Committee, 2015, p. 1). The increasing rates of substance abuse issues, coupled with the relapse-prone nature of drug use (Liu et al., 2018), has created a great challenge for the Chinese government and called for a more effective way to address illicit drug use issues. The findings from this study suggest that procedural fairness used by police officers can motivate drug users to make more efforts to stop, as procedural fairness increases drug users' trust in police and in turn leads to their compliance behavior. Therefore, it is suggested that Chinese police officers demonstrate procedural fairness in their interactions with drug users, which requires officers to treat drug users with politeness, dignity, and respect, and show transparency and objectivity in making decisions related

to drug users. This is important especially considering the declining public trust in police in China in the reform era (Wu & Boateng, 2019; Wu & Makin, 2019). Given that procedural fairness is supposed to create and maintain internal prosocial values on the part of citizens that support long-term law-abiding behavior (Tyler, 2000; Tyler & Huo, 2002), it is of high relevance to the efforts in dealing with illicit drug use, as it encourages self-regulatory behavior that helps address the relapse-prone nature of drug use.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## ORCID

Guangzhen Wu  <http://orcid.org/0000-0001-5767-0986>

## References

- Akinlabi, O. M. (2017). Young people, procedural justice and police legitimacy in Nigeria. *Policing and Society*, 27(4), 419–438. doi:10.1080/10439463.2015.1077836
- Augustyn, M. B. (2015). The (ir) relevance of procedural justice in the pathways to crime. *Law and Human Behavior*, 39(4), 388–401. doi:10.1037/lhb0000122
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. doi:10.1037/0022-3514.51.6.1173
- Boateng, F. D. (2018). Institutional trust and performance: A study of the police in Ghana. *Australian & New Zealand Journal of Criminology*, 51(2), 164–182. doi:10.1177/0004865817712335
- Bouffard, L. A., & Piquero, N. L. (2008). Defiance theory and life course explanations of persistent offending. *Crime & Delinquency*, 56(2), 227–252. doi:10.1177/0011128707311642
- Cherney, A., & Murphy, K. (2013). Policing terrorism with procedural justice: The role of police legitimacy and law legitimacy. *Australian & New Zealand Journal of Criminology*, 46(3), 403–421. doi:10.1177/0004865813485072
- Cheurprakobkit, S., & Bartsch, R. A. (2001). Police performance: A model for assessing citizens' satisfaction and the importance of police attributes. *Police Quarterly*, 4(4), 449–468. doi:10.1177/109861101129197941
- China National Narcotic Control Committee. (2015, June 24). 2014 nian zhongguo dupin xingshi baogao [China drug crime report in 2014]. Retrieved from [http://www.nncc626.com/2015-06/24/c\\_127945747\\_2.htm](http://www.nncc626.com/2015-06/24/c_127945747_2.htm)
- China News Service. (2015, April 2). Dupin Zheng Xiang Nongcun Shentou, Nongcun Xidu Renyuan Yifanyangxi [Illicit drugs is increasingly used in rural areas, and rural drug users sustain their drug abuse by selling illicit drugs]. Retrieved from <http://www.chinanews.com/sh/2015/04-02/7177745.shtml>
- Davies, S. G., Meliala, A., & Buttle, J. (2016). Gangnam style versus eye of the tiger: People, police and procedural justice in Indonesia. *Policing and Society*, 26(4), 453–474. doi:10.1080/10439463.2014.949712
- Fitzgerald, M., Hough, M., Joseph, I., & Quershi, T. (2002). *Policing for London*. Cullompton, Devon: Willan Publishing.
- 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. doi:10.1016/j.jcrimjus.2011.09.004
- Gau, J. M., Corsaro, N., Stewart, E. A., & Brunson, R.K. (2012). Examining macro-level impacts on procedural justice and police legitimacy. *Journal of Criminal Justice*, 40(4), 333–343. doi:10.1016/j.jcrimjus.2012.05.002.

- Heinz, A. M., & Kerstetter, W. A. (1979). Pretrial settlement conference: Evaluation of a reform in plea bargaining. *Law and Society Review*, 13, 349–366. doi:10.2307/3053258
- Hinds, L., & Murphy, K. (2007). Public satisfaction with police: Using procedural justice to improve police legitimacy. *Australian & New Zealand Journal of Criminology*, 40(1), 27–42. doi:10.1375/acri.40.1.27.
- Hough, M., Jackson, J., Bradford, B., Myhill, A., & Quinton, P. (2010). Procedural justice, trust, and institutional legitimacy. *Policing: A Journal of Policy and Practice*, 4(3), 203–210. doi:10.1093/police/paq027
- Houlden, P. (1980). The impact of procedural modifications on evaluations of plea bargaining. *Law and Society Review*, 15, 267–292. doi:10.2307/3053605
- Jackson, J., Asif, M., Bradford, B., & Zakria Zakar, M. (2014). Corruption and police legitimacy in Lahore, Pakistan. *British Journal of Criminology*, 54(6), 1067–1088. doi:10.1093/bjc/azu069
- Jackson, J., & Bradford, B. (2009). Crime, policing and social order: On the expressive nature of public confidence in policing. *The British Journal of Sociology*, 60(3), 493–521. doi:10.1111/j.1468-4446.2009.01253.x
- 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. doi:10.1007/s1094
- Kim, Y. S., Ra, K. H., & McLean, K. (2019). The generalizability of police legitimacy: Procedural justice, legitimacy, and speeding intention of South Korean drivers. *Asian Journal of Criminology*, 14(1), 41–59. doi:10.1007/s11417-018-9278-9
- Kitzmann, K. M., & Emery, R. E. (1993). Procedural justice and parents' satisfaction in a field study of child custody dispute resolution. *Law and Human Behavior*, 17(5), 553–567. doi:10.1007/BF01045073
- Knight, J., Shi, L., & Song, L. (2006). The rural-urban divide and the evolution of political economy in China. In J. K. Boyce, S. Cullenberg, P. K. Pattanaik, & R. Pollin (Eds.), *Human development in the era of globalization: Essays in honor of Keith B. Griffin* (pp. 44–63). Northampton, MA: Edward Elgar Publishing Limited.
- Kochel, T. R., Parks, R., & Mastrofski, S. D. (2013). Examining police effectiveness as a precursor to legitimacy and cooperation with police. *Justice Quarterly*, 30(5), 895–925. doi:10.1080/07418825.2011.633544
- Lai, Y. L., & Zhao, J. S. (2010). The impact of race/ethnicity, neighborhood context, and police/citizen interaction on residents' attitudes toward the police. *Journal of Criminal Justice*, 38(4), 685–692. doi:10.1016/j.jcrimjus.2010.04.042
- Liu, S., & Liu, J. (2018). Police legitimacy and compliance with the law among Chinese youth. *International Journal of Offender Therapy and Comparative Criminology*, 62(11), 3536–3561. doi:10.1177/0306624X17740559
- Liu, L., Wang, H., Chui, W. H., & Cao, L. (2018). Chinese drug users' abstinence intentions: The role of perceived social support. *Journal of Drug Issues*, 48(4), 519–535. doi:10.1177/0022042618779379
- Madon, N. S., Murphy, K., & Cherney, A. (2016). Promoting community collaboration in counterterrorism: Do social identities and perceptions of legitimacy mediate reactions to procedural justice policing? *British Journal of Criminology*, 57(5), 1144–1164. doi:10.1093/bjc/azw053
- Mazerolle, L., Antrobus, E., Bennett, S., & Tyler, T. R. (2013). Shaping citizen perceptions of police legitimacy: A randomized field trial of procedural justice. *Criminology; An interdisciplinary Journal*, 51(1), 33–63. doi:10.1111/j.1745-9125.2012.00289.x
- 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. doi:10.1007/s11292-012-9160-1
- Mazerolle, L., Bennett, S., Davis, J., Sargeant, E., & Manning, M. (2013). Procedural justice and police legitimacy: A systematic review of the research evidence. *Journal of Experimental Criminology*, 9(3), 245–274. doi:10.1007/s11292-013-9175-2
- Mikula, G., Petri, B., & Tanzer, N. (1990). What people regard as unjust: Types and structures of everyday experiences of injustice. *European Journal of Social Psychology*, 20, 133–149. doi:10.1002/ejsp.2420200205
- Murphy, K. (2005). Regulating more effectively: The relationship between procedural justice, legitimacy, and tax non-compliance. *Journal of Law and Society*, 32(4), 562–589. doi:10.1111/j.1467-6478.2005.00338.x

- Murphy, K., Mazerolle, L., & Bennett, S. (2014). Promoting trust in police: Findings from a randomised experimental field trial of procedural justice policing. *Policing and Society*, 24(4), 405–424. doi:10.1080/10439463.2013.862246
- Murphy, K., Tyler, T. R., & Curtis, A. (2009). Nurturing regulatory compliance: Is procedural justice effective when people question the legitimacy of the law? *Regulation & Governance*, 3(1), 1–26. doi:10.1111/j.1748-5991.2009.01043.x
- Nix, J., Wolfe, S. E., Rojek, J., & Kaminski, R. J. (2015). Trust in the police: The influence of procedural justice and perceived collective efficacy. *Crime & Delinquency*, 61(4), 610–640. doi:10.1177/001128714530548
- Paternoster, R., Bachman, R., Brame, R., & Sherman, L. W. (1997). Do fair procedures matter—the effect of procedural justice on spouse assault. *Law & Society Review*, 31(1), 163–204. doi:10.2307/3054098
- 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. doi:10.1177/0093854807301275
- 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. doi:10.1177/1098611108327311
- Ren, L., Cao, L., Lovrich, N., & Gaffney, M. (2005). Linking confidence in the police with the performance of the police: Community policing can make a difference. *Journal of Criminal Justice*, 33(1), 55–66. doi:10.1016/j.jcrimjus.2004.10.003
- Shapiro, D. L., & Brett, J. M. (1993). Comparing three processes underlying judgments of procedural justice: A field study of mediation and arbitration. *Journal of Personality and Social Psychology*, 65(6), 1167–1177. doi:10.1037/0022-3514.65.6.1167
- Sun, I. Y., Wu, Y., Hu, R., & Farmer, A. K. (2017). Procedural justice, legitimacy, and public cooperation with police: Does Western wisdom hold in China? *Journal of Research in Crime and Delinquency*, 54(4), 454–478. doi:10.1177/0022427816638705
- Sunshine, J., & Tyler, T. R. (2003). The role of procedural justice and legitimacy in shaping public support for policing. *Law & Society Review*, 37(3), 513–548. doi:10.1111/1540-5893.3703002
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson.
- Tankebe, J. (2009). Public cooperation with the police in Ghana: Does procedural fairness matter? *Criminology*, 47(4), 1265–1293. doi:10.1111/j.1745-9125.2009.00175.x
- Thibaut, J., & Walker, L. (1975). *Procedural justice: A psychological analysis*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Tsushima, M., & Hamai, K. (2015). Public cooperation with the police in Japan: Testing the legitimacy model. *Journal of Contemporary Criminal Justice*, 31(2), 212–228. doi:10.1177/1043986214568836
- Tyler, T. (1990). *Why people obey the law*. New Haven, CT: Yale University Press.
- Tyler, T. R. (2000). Social justice: Outcome and procedure. *International Journal of Psychology*, 35(2), 117–125. doi:10.1080/002075900399411
- Tyler, T. R. (2004). Enhancing police legitimacy. *The ANNALS of the American Academy of Political and Social Science*, 593(1), 84–99. doi:10.1177/0002716203262627
- Tyler, T. R. (2005). Policing in black and white: Ethnic group differences in trust and confidence in the police. *Police Quarterly*, 8(3), 322–342. doi:10.1177/1098611104271105
- Tyler, T. R. (2006). Restorative justice and procedural justice: Dealing with rule breaking. *Journal of Social Issues*, 62(2), 307–326. doi:10.1111/j.1540-4560.2006.00452.x
- Tyler, T. R., & Blader, S. L. (2005). Can businesses effectively regulate employee conduct? The antecedents of rule following in work settings. *Academy of Management Journal*, 48(6), 1143–1158. doi:10.5465/amj.2005.19573114
- Tyler, T. R., & Boeckmann, R. J. (1997). The three Strikes and You Are out, but Why—The Psychology of public support for Punishing rule Breakers. *Law & Society Review*, 31, 237. doi:10.2307/3053926
- Tyler, T. R., & Fagan, J. (2008). Legitimacy and cooperation: Why do people help the police fight crime in their communities. *Ohio State Journal of Criminal Law*, 6, 231–275.
- Tyler, T. R., & Huo, Y. (2002). *Trust in the law: Encouraging public cooperation with the police and courts*. New York, NY: Russell Sage Foundation.

- Tyler, T. R., & Jackson, J. (2014). Popular legitimacy and the exercise of legal authority: Motivating compliance, cooperation, and engagement. *Psychology, Public Policy, and Law*, 20(1), 78–95. doi:10.1037/a0034514
- Tyler, T. R., & Lind, E. A. (1992). A relational model of authority in groups. *Advances in Experimental Social Psychology*, 25, 115–191. doi:10.1016/S0065-2601(08)60283-X
- Tyler, T. R., & Lind, E. A. (2001). Procedural justice. In J. Sanders, & V. Hamilton (Eds.), *Handbook of justice research in Law* (pp. 65–92). New York, NY: Plenum.
- Tyler, T. R., Sherman, L., Strang, H., Barnes, G. C., & Woods, D. (2007). Reintegrative shaming, procedural justice, and recidivism: The engagement of offenders' psychological mechanisms in the Canberra RISE Drinking-and-driving Experiment. *Law & Society Review*, 41(3), 553–586. doi:10.1111/j.1540-5893.2007.00314.x
- Van Craen, M., & Skogan, W. G. (2015). Trust in the Belgian police: The importance of responsiveness. *European Journal of Criminology*, 12(2), 129–150. doi:10.1177/1477370814543156
- Wales, H. W., Hiday, V. A., & Ray, B. (2010). Procedural justice and the mental health court judge's role in reducing recidivism. *International Journal of Law and Psychiatry*, 33(4), 265–271. doi:10.1016/j.ijlp.2010.06.009
- Wu, G., & Boateng, F. D. (2019). Police perception of citizens and its impact on police effectiveness and behavior: A cross-cultural comparison between China and Ghana. *Policing: An International Journal*, 42(5), 785–797. doi:10.1108/PIJPSM-07-2018-0099
- Wu, G., & Makin, D. A. (2019). The quagmire that is an unwillingness to report: Situating the code of silence within the Chinese police context. *Criminal Justice and Behavior*, 46(4), 608–627. doi:10.1177/0093854819831732