Turning the corner on procedural justice theory: exploring reverse causality with an experimental vignette in a longitudinal survey

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Abstract

Objectives Traditional police procedural justice theory argues that citizen perceptions of fair treatment by police officers increase police legitimacy, which leads to an increased likelihood of legal compliance. Recently, Nagin and Telep (2017) criticized these causal assumptions, arguing that prior literature has not definitively ruled out reverse causality—that is, legitimacy influences perceptions of fairness and/or compliance influences perceptions of both fairness and legitimacy. The goal of the present paper was to explore this critique using experimental and correlational methodologies within a longitudinal framework.
Methods Adolescents completed a vignette-based experiment that manipulated two aspects of officer behavior linked to perceptions of fairness: voice and impartiality. After reading the vignette, participants rated the fairness and legitimacy of the officer within the situation. At three time points prior to the experiment (1, 17, and 31 months), participants completed surveys measuring their global perceptions of police legitimacy and self-reported delinquency. Data were analyzed to assess the extent to which global legitimacy and delinquency predicted responses to the vignette net of experimental manipulations and controls.
Results Both experimental manipulations led to higher perceptions of situational procedural justice and officer legitimacy. Prior perceptions of police legitimacy did not predict judgments of situational procedural justice; however, in some cases, prior engagement in delinquency was negatively related to situational procedural justice. Prior perceptions of legitimacy were positively associated with situational perceptions of legitimacy regardless of experimental manipulations.
Conclusions This study showed mixed support for the case of reverse causality among police procedural justice, legitimacy, and compliance.

Keywords Police · Procedural justice · Legitimacy · Juvenile justice · Delinquency · Reverse causality

The last 15 years have witnessed an explosion of research on police procedural justice and legitimacy with respect to promoting citizen compliance and trust. Generally, this work has found that citizens are more likely to believe in the legitimacy of law enforcement when officers treat citizens respectfully and make decisions in a fair way (e.g., Reisig et al. 2018; Tyler and Jackson 2014). In response to this substantial body of literature, policymakers and police departments have increasingly included procedural justice in their discussions of appropriate policing (Gilbert et al. 2016; President's Task Force on 21st Century Policing 2015).

Recently, Nagin and Telep (2017) reviewed the police procedural justice literature to assess whether this traction was warranted. Generally, they concluded that although procedural justice was clearly important for policing, more work was needed to address gaps in the literature. Among other issues, they argued that the causal predictions underlying procedural justice theory—that is, procedurally fair policing increases police legitimacy which increases compliance—have not yet been credibly established within the realm of policing. Responding to their critique, Tyler (2017) largely agreed with this point, noting the dearth of experimental studies in this area.

Critical reviews of an emerging consensus are essential for any field of research striving to turn the corner in transforming theory into actionable policy. This is especially acute in the current policing environment as more departments give serious consideration to using procedural justice research to improve officer–citizen interactions. If scholars want these translational efforts to have a long-lasting impact on public policy, then it is imperative to confront the issues raised by Nagin and Telep's (2017) critique with empirical vigor. The current study provides a first step in this direction by examining the degree to which prior perceptions of police legitimacy and compliance are linked to participants' later judgments of an officer's behavior in an experimental vignette.

Procedural justice theory and reverse causality

Procedural justice theory in the policing realm argues that when citizens believe the police treat them in a fair manner, they are more likely to believe in the legitimacy of the law—that is, officers are an appropriate authority entitled to obedience (Tyler 2006). Citizens are more likely to comply with officers' directives and follow the law when they view police officers as legitimate authorities. In this way, procedural justice encourages self-regulation on the part of citizens with less need for heavy-handed surveillance and punishment on the part of the state (Tyler and Trinkner 2018).

Specific police behaviors that foster perceptions of procedural fairness can be classified along two related dimensions: quality of decision-making and quality of treatment (Blader and Tyler 2003). Quality of decision-making encompasses issues like giving citizens a voice, making impartial decisions free from bias, and explaining the reasoning behind decisions. On the other hand, quality of treatment refers to behaving in respectful ways, showing care and concern, and being honest with citizens, for example. In this account, the theoretical causal chain runs from police behavior to judgments of fairness to perceptions of legitimacy to legal compliance.

While dozens of studies have supported the linkages among police officer behavior, fairness judgments, legitimacy, and compliance (see Tyler et al. 2015 for review), the

vast majority utilized cross-sectional correlational methodology. Noting this fact, Nagin and Telep (2017) concluded that researchers have failed to establish the causal assumptions of the theory because such methodology cannot rule out the possibility of reverse causality—that is, the causal chain runs in the opposite direction. For example, one could imagine a case in which individuals who believe police officers are legitimate authorities would be more likely to judge police behavior as procedurally fair than individuals who believe the police are illegitimate. Similarly, individuals who engage in more criminal behavior may be more likely to rationalize such deviance by judging police behavior as unfair and their authority as illegitimate. Because of the overreliance on cross-sectional correlational methodology, none of these alternative explanations can be definitively ruled out.

Current study

This paper examines the case of reverse causality within traditional police procedural justice theory using data from the New Hampshire Youth Study (NHYS; Cohn et al. 2010). In particular, we use longitudinal methods to examine the extent to which general perceptions of police legitimacy and delinquency influenced participants' responses to an experimental vignette detailing an officer–citizen interaction. If Nagin and Telep (2017) are correct in their assessment for the possibility of reverse causality, then general perceptions of police legitimacy and compliance should significantly influence judgments of procedural justice and officer legitimacy within the vignette, net of the experimental manipulations.

Method

Data

This study uses two sources of data. The first comes from the NHYS, a longitudinal study of adolescent behavior (see Cohn et al. 2010 for more detail). We selected data from 2009 (time 1), 2010 (time 2), and 2011/2012 (time 3) because respondents completed measures of general police legitimacy and delinquency during these collection periods.

The second source of data comes from an experiment conducted with a subsample of NHYS participants in the winter of 2011/2012 (time 4). This experiment presented participants with vignettes describing a scenario involving an adolescent and a police officer where the adolescent asks a police officer for a permit to engage in a legally restricted behavior (see Trinkner and Cohn 2014 for more detail). The officer always denies the request. The experiment used a 2 (voice: yes, no) × 2 (impartiality: yes, no) between-subject design.[1] Each of the specific manipulations is described in Table 1.

After reading the vignette, participants were asked questions about the fairness of the officers' treatment, the legitimacy of the officer within that situation, and their cynicism

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[1] All four scenarios can be found in the supplemental appendix accompanying this article which can be found online at https://www.researchgate.net/profile/Rick_Trinkner

Table 1 Text of experimental manipulations

Condition	Manipulation text
Voice	
No	The police officer at the front desk does not even listen to any of Edward's reasons for why he wants to play in the park instead of some other venue. Instead, the police officer cuts Edward off…
Yes	The police officer at the front desk attentively listens to Edward explain why he wants to play in the park rather than at some other venue. After Edward is done explaining all of his reasons…
Impartiality	
No	However, his friend from another band was able to get a permit because his parents were friends with one of the police officers.
Yes	He knows that the city has a rule against playing music in the park, which the police always enforce, but he wants to try anyway.

about the specific law the officer enforced.[2] In their analysis, Trinkner and Cohn (2014) showed that the manipulations led to higher perceptions of situational procedural fairness and officer legitimacy; however, they did not examine the extent to which participants' prior perceptions of general police legitimacy and delinquency influenced their interpretation of the vignette net of the experimental manipulations.

Participants

Wave characteristics and demographics are displayed in Table 2. Almost 800 participants completed the survey at time 1 with a substantial drop off in the ensuing years as some respondents graduated from high school. Almost 400 people completed the experiment at time 4 with 300–400 people completing each wave and the experiment. Depending on the collection period, there were between 1 and 31 months between completing the surveys and the experiment, on average. The demographic composition of the sample was stable across each collection period and was majority female and primarily White. Participants received gift certificates for participating in each collection period.

Measures

Descriptive statistics are shown in Table 3.[3] Unless otherwise specified, all items were coded so that higher scores reflected greater amounts of the measured construct.

Survey measures We used a ten-item measure of *general police legitimacy* tapping into participants' trust in the police and their felt obligation to obey their directives (see Sunshine and Tyler 2003). We used a 22-item self-report variety measure of *delinquency* tapping three

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[2] The current paper is meant to assess the potential for reverse causality among procedural justice, legitimacy, and delinquency specifically. As such, we do not present analyses of the cynicism question, although they are available in the supplemental appendix.

[3] Specific items and response options for each scale can be found in the supplemental appendix.

Table 2 Wave characteristics and sample demographics for each data collection period

	Time 1 (T1)	Time 2 (T2)	Time 3 (T3)	Time 4 (T4)
Collection type	Survey	Survey	Survey	Experiment
Participants[1]				
Each wave	779	532	589	393
Each wave and experiment	334	308	387	–
Time[2]				
In months (M, SD, min–max)	31.30, 1.93, 26–37	16.59, 2.48, 8–22	.99, 1.12, 0–6	–
Demographics				
Sex (% male)	39.4%	35.9%	36.5%	30.3%
Race (% White)	80.7%	81.4%	81.3%	84.7%
Age (M, SD, min–max)	15.17, 1.63, 12–18	16.49, 1.54, 14–20	17.71, 1.52, 15–20	17.90, 1.57, 16–21

[1] Three hundred and four people provided data at all four time points

[2] Average time between participating in each survey and the experiment

offense categories: property offenses, violent offenses, and illegal substance use. Both of these measures were included in the NHYS survey at times 1–3.

Situational measures After reading the experimental vignette, participants' completed two sets of questions assessing their perception of the situation (see Trinkner and Cohn 2014). Three items asked the degree to which the officer behaved in a *procedurally just* manner. Ten items asked about their perception of the *officer's legitimacy*.

Table 3 Descriptive statistics

	Mean	SD	Min	Max	α (overall)	α (within cells)
SES	− 0.05	0.78	− 2.71	2.42	.91	–
General police legitimacy[1]						
Time 1	2.84	0.51	1.00	4.00	.83	–
Time 2	2.94	0.53	1.00	4.00	.84	–
Time 3	2.86	0.44	1.00	4.00	.81	–
Delinquency[2]						
Time 1	2.03	3.21	0.00	22.00	.90	–
Time 2	1.58	2.69	0.00	22.00	.86	–
Time 3	1.90	2.63	0.00	22.00	.84	–
Situation specific (time 4)						
Procedural justice	3.13	1.21	1.00	5.00	.93	.89–.92
Officer legitimacy	3.64	0.72	1.00	5.00	.91	.89–.92
Social desirability	10.52	3.48	0.00	17.00	.75	.71–.79

[1] Correlation among measures: $r = .42$–$.55$

[2] Correlation among measures: $r = .44$–$.52$

Control measures First, we constructed a measure of *socioeconomic status* (SES) that included five items about respondents' family monetary situation and parents' education that were included throughout the four time points. Each item was standardized; then, scores across all items were averaged to create a single measure. Second, a 17-item measure of impression management was included to account for participants' propensity to respond to the experiment in a *socially desirable* manner (Stöber 2001). Participant responses were summed to create a measure of social desirability.

Results

We estimated two sets of multiple regressions, one for each outcome of interest: situational procedural justice and situational officer legitimacy.[4] Each model included the voice and impartiality manipulations, general police legitimacy, delinquency, and the control variables as predictors. Within each set, the model was run first with time 1 predictors (i.e., general police legitimacy, delinquency, and age), then again with time 2 predictors, and finally with time 3 predictors. Standardized coefficients for each model are presented in Table 4.[5]

In terms of respondents' judgments of situational procedural justice, both the voice and the impartiality manipulations caused higher judgments of situational procedural justice. Importantly, general police legitimacy was unassociated with fairness judgments regardless of the time point studied. Delinquency showed a mixed pattern, with higher delinquency at times 1 and 3, but not time 2, associated with lower judgments of situational procedural justice.

With respect to situational officer legitimacy, older participants were less likely to believe in the legitimacy of the officer, while social desirability was strongly associated with greater situational legitimacy perceptions. As was the case with situational procedural justice, both the voice and impartiality manipulations led to greater perceptions of situational legitimacy. However, general police legitimacy was also positively associated with situational legitimacy across all three time points, with the effect getting stronger as the two measures converged in time. Although delinquency at time 3 was weakly associated with a lower perception of situational legitimacy, it had no associations when measured at times 1 and 2.

Discussion

This paper explored the case for reverse causality within traditional police procedural justice theory. In short, given the overreliance on correlational cross-sectional methodology in most tests of procedural justice, it may be the case that delinquency and legitimacy actually influence judgments of procedural justice rather than vice versa (see

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[4] For interested readers, we also explored the extent to which race interacted with general perceptions of police legitimacy (see Rosenbaum et al. 2005) and whether general perceptions of legitimacy interacted with the experimental conditions. These analyses are detailed in the supplemental appendix.

[5] All analyses are available in the supplemental appendix along with complete tables displaying standardized and unstandardized coefficients, standard errors, and confidence intervals.

Table 4 Standardized parameter estimates predicting situational procedural justice, officer legitimacy, and cynicism as a function of experimental manipulations and general police legitimacy across time

Predictors[1]	Situational procedural justice (T4)			Situational officer legitimacy (T4)		
Age[†]	− 0.03	− 0.08	− 0.03	− 0.13**	− 0.17**	− 0.16**
Sex	0.03	− 0.02	0.03	− 0.08	− 0.10	− 0.04
White	− 0.09*	− 0.09	− 0.06	− 0.08	− 0.05	− 0.04
SES	0.03	0.03	0.01	− 0.04	0.02	− 0.05
Social desirability (T4)	0.00	0.04	− 0.01	0.22***	0.15**	0.17**
Voice (T4)	0.48***	0.50***	0.46***	0.28***	0.29***	0.24***
Impartiality (T4)	0.39***	0.39***	0.39***	0.19***	0.25***	0.20***
Delinquency (T1)	− 0.13**	–	–	− 0.08	–	–
Delinquency (T2)	–	− 0.05	–	–	− 0.01	–
Delinquency (T3)	–	–	− 0.14**	–	–	− 0.11*
General police legitimacy (T1)	− 0.01	–	–	0.16**	–	–
General police legitimacy (T2)	–	0.01	–	–	0.18**	–
General police legitimacy (T3)	–	–	0.03	–	–	0.24***
F	23.83***	22.65***	23.47***	12.63***	12.21***	15.38***
Df	9, 319	9, 288	9, 351	9, 323	9, 289	9, 355
R[2]	.40	.41	.38	.26	.28	.28

*p < .05; **p < .01; ***p < .001

[1] Sex: 1 = man; White: 1 = White; voice: 1 = yes; impartiality: 1 = yes

[†] Taken from the same wave as general police legitimacy and delinquency in each model

Nagin and Telep 2017). The analyses found evidence for reverse causality in some instances (delinquency as a predictor) and no support in others (general police legitimacy as a predictor). A number of findings are noteworthy.

First, with respect to judgments of situational procedural justice, there was no evidence of reverse causality in terms of general police legitimacy. Situational judgments of police procedural justice were driven almost exclusively by the way the officer behaved within the vignette. At no point was general police legitimacy associated with situational procedural justice, supporting the directionality put forth in traditional police procedural justice theory (see Tyler 2006) about the relation between procedural justice and legitimacy within specific police encounters.

On the other hand, there was some evidence of reverse causality with respect to the relation between situational procedural justice and delinquency. In some cases, more delinquent participants were less likely to believe the officer behaved in a procedurally fair manner independent of the experimental manipulations. However, this conclusion warrants caution as the relation between delinquency and situational procedural justice emerged at time 1 (31 months before the experiment) and time 3 (1 month before) but not time 2 (17 months prior). There is little reason to expect this pattern of findings. If anything, one might expect that the relation between delinquency and fairness judgments would get stronger as the two measures converged in time. On the other hand, it might be a power issue as time 2 had the lowest number of participants who completed both the survey and the experiment.

Second, situational officer legitimacy was driven by both the way the officer behaved in the scenario (i.e., the experimental manipulations) and participants' prior beliefs of general police legitimacy. This highlights the notion that situational judgments of police authority are best thought of as an amalgam of both immediate and prior experiences, a point of agreement between Nagin and Telep (2017) and Tyler (2006). We would be remiss to not emphasize that participants' perceptions of situational legitimacy were attached to general police legitimacy perceptions that were formed almost *three full years before* participants were exposed to the experimental vignette. This continuity in legitimacy perceptions underscores a growing consensus from the legal socialization literature that researchers must give more attention to the development of adolescents' beliefs about the law to fully understand the way they interface with legal authority once they reach adulthood (Tyler and Trinkner 2018).

With respect to the influence of prior delinquent behavior on perceptions of situational legitimacy, there was a small amount of evidence supporting a claim of reverse causality. Delinquency measured 1 month prior to the experiment had a small but significant negative effect on situational legitimacy; however, this was not replicated at times 1 or 2. This suggests that any influence delinquency has on situational perceptions of officer legitimacy may be short lived.

Limitations

Nagin and Telep's (2017) central critique of the police procedural justice literature was that prior research has not credibly established that procedural justice causes legal compliance. The methodology used in the present study does not address this argument. Our goal was to explore the issue of reverse causality: the degree to which prior perceptions of police legitimacy and delinquent behavior were linked to judgments of procedural justice and situational police legitimacy net of officer behavior. Although the present results find some support for the possibility of a reverse causal chain, they suffer from the third variable problem identified by Nagin and Telep (2017). Briefly, the associations between general perceptions of police legitimacy and self-reported delinquency and the responses to the vignette may have been due to other factors that were not controlled for in this analysis. While it is unclear if including these factors would change the pattern of findings with respect to general police legitimacy, it may explain the pattern of findings with respect to delinquency given significant associations between delinquency and situational procedural justice and legitimacy. Future research should aim to account for a broader array of other factors.

The present study also used fictional vignettes to assess how adolescents respond to police interactions. Although this strategy is a useful method to examine how people make social judgments (Rossi and Nock 1982), it does not supplant the need for experimental field research examining real interactions between police officers and citizens. Moreover, the manipulations in the present study focused on quality of decision-making issues rather than quality of treatment. Although these two dimensions are highly correlated (Blader and Tyler 2003), the present results may not be replicated if a treatment manipulation is used (e.g., respect or benevolence). The vignette used in the present study also represents a single event, one that likely does not capture all the types of police–citizen interactions that procedural justice is meant to address (see President's Task Force on 21st Century Policing 2015). In this respect, the results here

should not be taken as the last word on the relations among these constructs. In particular, future work should strive to assess these relations across a more diverse set of interactions and experiences.

In addition, we examined the degree to which general perceptions of police legitimacy influenced interpretations of a specific situational event. While this addresses Nagin and Telep's (2017) critique in one sense, the vast majority of the procedural justice literature examines general/global perceptions. It may still be the case that general perceptions of police procedural justice are formed by general perceptions of police legitimacy, which this study cannot speak to directly. Furthermore, we examined the case for reverse causality in a sample of adolescents. Given that legal attitudes within this population are more malleable than adults (Tyler and Trinkner 2018), these findings should be replicated with adult samples. Additionally, we used a self-report measure of delinquency. Although prior work has indicated that self-report measures correspond with objective measures of criminality (Thornberry and Krohn 2000), there is no way to assess if this is the case in the NHYS specifically. Future work should continue to explore the case for reverse causality using alternative measures (e.g., arrest reports). Finally, because of the realities of the demographic population of New Hampshire, this sample was mostly White and relatively affluent. It was also majority female. Readers should use caution in generalizing the findings to non-Whites, other social classes, and boys/men.

Final words

Nagin and Telep's (2017) review of the police procedural justice literature represents a strong challenge to the field, one that should be confronted with equally strong empirical research utilizing a range of methodologies. Now that procedural justice is being taken seriously by both police agencies and the public, it is necessary for researchers to turn the corner and translate that research into actionable policy. Grappling with the limits of prior research is the first step in this process. Successfully doing so will ensure that any such translations will have a lasting influence. Given its methodological limitations, the present study is a small step in turning that corner, but it does highlight the need for scholars to continue to explore these issues.

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