

# Development and Validation of the Attitudes Towards Police Legitimacy Scale

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Although there is a substantial body of work examining attitudes towards the police, no measure has been developed to consistently capture citizens' beliefs regarding police legitimacy. Given that police conduct has garnered a great deal of attention, particularly in the last few years, the current research sought to develop a scale measuring perceptions of police legitimacy. Across multiple studies, items were created and the scale's factor structure explored (Study 1 and Study 2), the factor structure was confirmed (Study 3a), and the predictive validity of the scale was tested (Studies 3b–3d). Results provided evidence for a reliable and valid 34-item scale with a single-factor solution that predicted multiple outcomes, including justification of a police shooting (Study 3b) and resource allocation to a police charity (Study 3c), as well as correlations with self-reported criminal activity, right-wing authoritarianism, and social dominance orientation (Study 3d). We hope this scale will be useful in the study of police legitimacy, expanding the current literature, and improving police–community relations.

## **Public Significance Statement**

Police legitimacy, or the approval in the authority of police because of who they are and how they act, is a critical element in how individuals view the police and, in turn, affects how they interact with and behave around police. We have developed and tested a scale measuring police legitimacy, the Attitude Towards Police Legitimacy Scale. We hope this scale can assist in understanding perceptions of the police and aid in the repair of communities most affected by police action.

*Keywords:* police, legitimacy, scale development, police attitudes

Dontre Hamilton, Eric Garner, Philando Castile, Tamir Rice, and Walter Scott are just a few individuals who have recently been killed by police officers (Mapping Police Violence, n.d.; The Washington Post, n.d.). These cases have heightened Americans' attention on police and police conduct. To understand attitudes and perceptions of the police, a particularly useful construct may be legitimacy, a concept that is applied to all actors in the legal system. Broadly, legitimacy can be conceptualized as the belief that an authority figure or institution is acting in a fair manner and is concerned with citizens' best interests, resulting in compliance with that authority (Tyler, 2006). Tyler (1990) is largely responsible for spreading the concept of legitimacy to a wide audience, including criminologists and psychologists. One of the conclusions of this work was that individuals comply with the law when legal authorities are viewed as legitimate and their actions fair, rather than because people fear punishment. Indeed, evidence has sup-

ported this contention. For example, in studying domestic violence, Paternoster, Brame, Bachman, and Sherman (1997) found that suspects who were treated fairly by the police had a subsequently lower rate of domestic violence, even comparable to suspects who had been given a more favorable outcome. Furthermore, legitimacy as a construct does not purely reflect a Western belief or attitude and has been applied to a variety of cultures and nations (Boateng, 2017; Jackson, Asif, Bradford, & Zakar, 2014; Tankebe, Reising, & Wang, 2016). Thus, a key aspect of assessing police attitudes may be through legitimacy. Yet there are surprisingly few validated scales for legitimacy and even fewer created specifically for the police. Therefore, we sought to create and validate a scale anchored in the legitimacy construct. We discuss the legitimacy construct and why a focus on police legitimacy is particularly important and present multiple studies creating and validating a new scale.

## **What Is Legitimacy?**

Defining *legitimacy* is no easy task, because the concept is discussed in a variety of literatures, including political, philosophical, and social sciences. Some, including moral philosophers, focus on normative legitimacy, which involves how government institutions should be arranged if their power is justified by an external observer (Hinsch, 2010; Jackson, Milani, & Bradford, in press; Tankebe, 2014). However, social scientists typically consider

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legitimacy as an empirical concept involving, for example, whether citizens view power as normatively justified (Hinsch, 2008; Jackson et al., in press). Within the empirical forms of legitimacy, some define it as a public judgment of appropriateness, whereas others define it as a public judgment of entitlement (for a more in-depth discussion on the history and various views on legitimacy, see Bottoms & Tankebe, 2012; Coicaud, 2002; Hawdon, 2008; Jackson et al., in press; Tankebe, 2014; Tyler & Jackson, 2014).

Tyler (1990) focused on legitimacy as the “acceptance by people of the need to bring their behavior into line with the dictates of an external authority” (p. 25). In other words, legitimacy is an individual’s obligation to obey authority. This definition has been expanded on, and legitimacy has been viewed as, in addition to obligation to authority, trust and confidence that authorities will be honest and are concerned about the best interests of citizens (Tyler & Jackson, 2014). Nonetheless, obligation to authority has been a central element of the construct and measurement of legitimacy (Kochel, Parks, & Mastrofski, 2013; Reisig, Bratton, & Gertz, 2007; Reisig & Lloyd, 2009; Tyler & Huo, 2002).

Tyler and Jackson (2014) investigated perceptions of legitimacy towards the law, police, and the courts with a three-dimensional view of legitimacy: obligation, trust and confidence, and normative alignment. Obligation to police was viewed as the internalization that one should obey the police. Trust and confidence was viewed as people’s perceiving legal authorities as sincere, concerned about citizen welfare, and as trustable to act in ways that benefit citizens. Finally, normative alignment was viewed as the belief that legal authorities have values and goals that align with their own values and goals.

Drawing from a panel of respondents maintained by the research firm Knowledge Networks, Tyler and Jackson (2014) found evidence to support their three-dimensional framework of legitimacy. Specifically, Tyler and Jackson found that each component of legitimacy predicted different types of behavior (e.g., obligation and trust and confidence predicted compliance, whereas normative alignment predicted engagement). Results also indicated that overall legitimacy scores were related to motivating law-related behavior and community engagement, such as obeying speeding and littering laws, and a willingness to report crime (Tyler & Jackson, 2014). Thus, this evidence suggested legitimacy could be separated into different dimensions and that these dimensions predicted a number of socially important variables. However, the components were not formally tested to determine whether they related to each other in the theoretically specified manner, nor were alternative models of the components of legitimacy tested. Despite some of the previous evidence, obligation, trust and confidence, and normative alignment are not considered the sine qua non dimensions of legitimacy.

Recently, several researchers have argued that obligation can be a consequence of legitimacy rather than one of its core features. Bottoms and Tankebe (2012) argued that some people might obey authority *because* they view authorities as legitimate. On the other hand, some might obey authorities because of a fear of the cost of disobedience or that there is no other alternative than to obey, for example, in a totalitarian regime. In this case, authorities may not be viewed as legitimate, but citizens are still obligated to obey. Bottoms and Tankebe therefore argued that obligation can be considered a dependent variable that is sometimes explained by perceived legitimacy.

Tankebe (2013) hypothesized four related factors that would constitute police legitimacy: distributive fairness, procedural fairness, effectiveness, and lawfulness. *Distributive fairness* is described as perceptions that people receive fair decisions (e.g., to arrest or not) and that the outcomes are distributed fairly (e.g., minorities or poor individuals are not disproportionately arrested). *Procedural fairness*, which concerns the fairness of how the outcomes are reached, is based on the quality of decision-making (e.g., opportunities for error correction) and the quality of treatment (e.g., respect, dignity, and courtesy). *Effectiveness* is the capacity not just to have fair outcomes but to obtain effective results (e.g., how well the police addressed different types of crimes, such as dangerous driving, murder, and economic crime). Finally, *lawfulness* concerns power that has been acquired and exercised through established rules. For example, if a citizen is searched, the search should be conducted consistent with pre-existing law.

In addition to hypothesizing these four factors of legitimacy, Tankebe (2013) predicted that these factors would predict obligation to obey police. Using data from a private research firm collected on behalf of the London police, Tankebe found evidence to support these hypotheses. As predicted, items specified as tapping into each factor loaded onto separate but related factors. Furthermore, these factors predicted obligation. That is, the evidence supported the contention that obligation is a consequence rather than a component of legitimacy. We generally agree with this conclusion. However, there were some limitations in this research, including that only two items were used as indicators for distributive fairness and lawfulness. Additionally, because the purpose of the research was theory testing, rather than measurement creation, no validated scale was produced.

Tankebe et al. (2016) built on this research by further testing the four-dimensional conceptualization of police legitimacy in the United States and Ghana. Their data did support a four-dimensional model of police legitimacy, and they demonstrated some evidence that police legitimacy predicted compliance. However, there were a number of methodological limitations. First, three of the four factors had only three items each, and the fourth factor had seven. Gorsuch (1983) recommended the minimum number of items be at least five per factor. Second, only one study was conducted. Thus, it is less clear what effects are sample-specific and what can replicate well. Third, there was a lack of testing alternative models. For example, alternative confirmatory factor analytic (CFA) models could have been constructed and their fit indices compared. Fourth, in the analyses testing the relationship between legitimacy and compliance, the scores were averaged across the factors. This was done because there was some evidence to support a second-order factor. However, there was not a strong justification for this analysis, and it seemed to diverge from the model structure hypothesized in Tankebe (2013). Finally, some of the factors indicated lower reliability, even in the U.S. sample, which was systematically higher on all factors. For example, the highest Cronbach’s alpha for the U.S. sample was .87, whereas the lowest was .62. The other two factors were below .77. In the Ghana sample, the highest Cronbach’s alpha was .80 and the lowest .57. Even with a Cronbach’s alpha of .70, this means that over half of the variance is error. Thus, it does not appear to be a particularly reliable measurement.

The research on legitimacy has not necessarily indicated one superior conceptual definition or model of legitimacy. Tyler and Jackson (2014) argued that obligation is a key element to legitimacy. Bottoms and Tankebe (2012) disagreed, and Tankebe (2013) and Tankebe et al. (2016) supported the argument that obligation is better considered a potential consequence of legitimacy. On the other hand, Bottoms and Tankebe argued that effectiveness is a key element of legitimacy. However, Tyler and Jackson found evidence that procedural justice, rather than effectiveness, is central to legitimacy. Similarly, Tyler and Sevier (2013) found that fairness was more important than was effectiveness. Thus, in the empirical study of legitimacy, there have been multiple frameworks, all of which have some support, yet none of which have produced a well-replicated and valid scale.

From a measurement perspective, it is important to distinguish the potential elements that make up the latent construct of legitimacy from the elements that might predict legitimacy or that legitimacy would, in turn, predict. We agree with Bottoms and Tankebe (2012) that obligation is not necessarily a key element of legitimacy itself but rather a potential consequence of it. Indeed, it is possible to respond affirmatively to obligation items such as “you should accept the decisions made by police, even if you think they are wrong” not because of a sense of legitimacy but because of a feeling of powerlessness (Jackson et al., *in press*).

However, we also disagree with Bottoms and Tankebe’s (2012) argument that effectiveness is a key element of legitimacy. Compared to fairness, and trust and confidence in police, effectiveness is a component that is far less dependent on the police themselves. For example, theoretically, police can “choose” to make fair decisions or be motivated by concerns for justice. However, even well-intentioned, well-trained officers may not always be effective at controlling crime. Crime is a complex phenomenon that depends on other aspects of the criminal justice system, such as courts and prisons, as well as genetics and the environment, which are not controlled by the police. Effectiveness is likely crucial to understanding legitimacy; however, we agree with Tyler and Jackson (2014) that it is not central to legitimacy itself. Rather, we see effectiveness as a possible predictor or antecedent of legitimacy. That is, if the police are effective, individuals will be more likely to view them as legitimate. Because the goal of this research was to produce a scale measuring the latent construct called police legitimacy, we conceptualized legitimacy not by its antecedents and consequences but by its most fundamental features. We drew on multiple approaches to explore the data to create a scale of police legitimacy.

### The Importance of Attitudes Towards Police

Tyler and colleagues have stated that the concept of legitimacy can be extended to all legal actors or institutions in the criminal justice system, such as correctional officers or the correctional facilities themselves (e.g., Tyler, 2006; Tyler & Jackson, 2014). Although legitimacy encompasses specific actors as well as institutions, there is value in measuring legitimacy of a specific entity, such as the police. For instance, police officers are the most visible part of the criminal justice system. People are more likely to encounter a law enforcement officer for various traffic violations, community events, or just on the street, compared to, for example, a corrections officer or a judge, who has contact with a much

smaller portion of the population. Indeed, even sitting at home staring out a window, one may see police action, whereas a wandering judge is a rare sight. There are two consequences of the police being the primary point of contact with the criminal justice system. First, when considering the legitimacy of the criminal justice system, the average person may primarily consider police. Thus, police legitimacy could potentially drive other legitimacy effects. Second, changes in the legitimacy of the criminal justice system are most likely to be first perceived through the police. Thus, potentially, police legitimacy could act as a “finger on the pulse” of the legitimacy of the criminal justice system as a whole and as it changes over time.

In a related vein, because people’s perceptions of various actors in the criminal justice system differ, it is important to measure those attitudes separately. Attitudes towards the police are important predictors of compliance and cooperation with the law (Pachristos, Meares, & Fagan, 2012; Tyler & Fagan, 2008); however, measuring attitudes towards judges may not necessarily yield the same results.

Last, attention towards police misconduct has increased over the past several years, due to highly public police shootings of civilians such as Michael Brown, Laquan McDonald, and Tamir Rice. The public has criticized the lack of police accountability, putting a strain on police and community relations (Jones, 2015; Morin, Parker, Stepler, & Mercer, 2017). Developing a scale to measure attitudes towards the police is a timely contribution to the literature, and there are many applications for such a scale. For instance, police departments can ascertain whether their officers’ actions have negatively impacted the public’s perception of the police and thus work to repair the relationship. Further, researchers can more consistently examine what affects a community’s perception of police and how relations between the police and the communities they serve can be improved.

### The Current Research

The current research is aimed at developing a scale that measures perceptions of police legitimacy. We consider police legitimacy to mean approving of the authority of police because of who they are and how they act. We consider attitudes, beliefs, and emotions of approval of police authority to be key. We also consider police legitimacy from the perspective of police as officers and police in agencies. Furthermore, we do not focus on the personal experience of individual citizens with individual officers but rather on overall impressions of police. Based on this conceptualization of police legitimacy, we hypothesized that police legitimacy would contain elements of bias (B), quality of interpersonal treatment (I), trustworthiness (T), motivation (M), quality and organizational integrity (O), being part of the community (C), and normative alignment (NA). Some of these elements have previously been considered core aspects of legitimacy. However, we also emphasized several somewhat novel elements and discuss each component in the next sections. We have omitted effectiveness as a component, because we were not concerned with the *effect* that police can have on social order and crime but instead were interested in the *behavior* of the police themselves. We have also omitted obligation, because we were not concerned with the potential products of police legitimacy but rather citizens’ impressions of the police themselves.

## Bias

The concept of bias is similar to the concept of distributive fairness (Bottoms & Tankebe, 2012; Tankebe, 2013). The essential question is, Are police fair and do they treat different people (e.g., African Americans vs. Caucasian Americans) similarly?

## Quality of Interpersonal Treatment

The quality of interpersonal treatment is similar to the concept of procedural fairness (Bottoms & Tankebe, 2012; Tankebe, 2013). Specifically, it concerns how interactions with the police are perceived and whether police treatment is respectful and courteous, rather than hostile.

## Trustworthiness

Trustworthiness concerns perceptions of police officer integrity, confidence that the police are reliable sources for help, and belief that police will act in the best interests of citizens (Tyler & Jackson, 2014). If people felt that the police were corrupt and could not be relied upon, then they would be regarded as low in trustworthiness.

## Motivation

The concept of motivation is somewhat novel as applied to police legitimacy. The concept of motivation concerns perceptions of *why* the police act as they do. Motivation concerns whether police are perceived to be motivated to help people and whether they desire justice. This component considers the attitude that even if fair outcomes are not always reached, police officers themselves are motivated to reach fair outcomes. Similarly, just because a fair outcome is reached does not necessarily mean that the decision was based on a motivation to help citizens.

## Quality and Organizational Integrity

Quality and organizational integrity is a potentially important component of legitimacy that focuses more on police departments. This component concerns the perception that police departments hire the best individuals, provide adequate training, and require high standards from officers. A perception of police legitimacy may involve the belief that although an officer may make a mistake, the department works to correct it. Thus, as an organization, there is a perception of integrity and quality control.

## Community

The community component recognizes that not only can police or their departments have meaningful interactions with citizens but that the community as a whole can interact with the police. Community has typically been considered from the perspective of normative alignment. That is, normative alignment may involve the evaluation of whether police share values with the community. However, viewing police as members of the community can be considered broader than identification with police but might also involve how the community itself feels about the police.

## Normative Alignment

Normative alignment involves the perception that the police share values and goals with the citizens (Tyler & Jackson, 2014). If they believe police are legitimate authorities, then citizens should be able to identify with the police and view their values and purposes as similar. Normative alignment is not the same as instrumental values; it does not come from something pragmatic, such as a shared desire to reduce crime, but involves being able to identify with police.

## Summary of Research Objectives

In the legitimacy literature, there is no widely used scale for police legitimacy. Thus, our research approach was threefold. First, we conceptualized a definition of police legitimacy based on the core features of this construct. Second, we developed and tested our novel police legitimacy scale through exploratory and confirmatory factor analyses. Third, we tested how well the scale could predict a number of theoretically meaningful behaviors and relationships. All studies herein were approved by the University of Wyoming's Institutional Review Board.

## Study 1

### Method

**Participants.** Using Amazon's Mechanical Turk (MTurk), we collected data from 806 participants, all of whom had to be located in the United States, have at least a 95% approval rating, and be at least 18 years of age. Participants were paid \$.40 for completing the survey. Initial data screening showed that 23 participants were either not from the United States or did not show location data, so they were excluded from analyses. This left a total of 783 participants (57.2% female,  $M_{age} = 37.29$ ) for data analysis.

**Attitudes Towards Police Legitimacy Scale.** A preliminary 73-item Attitudes Towards Police Legitimacy Scale (APLS) was developed to capture the attitudes, beliefs, and emotions towards the legitimacy of police officers. Responses were rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating higher (more positive) beliefs of police as legitimate authority figures. Items were developed to capture the seven components previously described: bias (eight items; two reverse-coded), quality of interpersonal treatment (10 items; six reverse-coded), trustworthiness (14 items; five reverse-coded), motivation (12 items; five reverse-coded), quality and organizational integrity (15 items; seven reverse-coded), community (10 items; two reverse-coded), and normative alignment (four items; scale items are presented in [Appendix A](#)).

**Police-related demographic information.** Items traditionally related to police attitudes were also included: political ideology and previous law enforcement history (self and family—friends). Political ideology was measured on this 6-point scale: 1 (*very liberal*), 2 (*liberal*), 3 (*somewhat liberal*), 4 (*somewhat conservative*), 5 (*conservative*), and 6 (*very conservative*). To determine previous law enforcement history, we asked participants to answer yes or no to the following two questions: "Are you currently or have you in the past been a law enforcement officer (for example, sheriff, state troopers, military police/involvement)?" and "Do you

have any family members or friends that are police officers or any type of law enforcement officer (for example, sheriff, state troopers, military police/involvement)?" *Yes* responses were coded as 1, and *no* responses were coded as 0.

**Procedure.** MTurk workers were directed to Survey Gizmo to complete the study online. After consenting to participate, they completed the 73-item APLS. Items were randomized to avoid order effects. Next, participants completed the political ideology item and the history of law enforcement items and then provided basic demographic information. After completing the study, participants were thanked and compensated.

## Results

**Data screening.** Data were screened prior to analysis. All values were in range and plausible, and no missing values were identified. All but one variable was adequately normally distributed (skew < |2.0|; kurtosis < |3.0|). The item "Are you currently or have you in the past been a law enforcement officer?" was skewed (5.585) and extremely kurtotic (29.268). Only 23 individuals in the data answered *yes* on this question. Thus, this item was not analyzed further. Potential outliers were identified based on  $z$  score  $\geq 13.291$ ,  $p \geq .001$ . Six outliers were identified on item T30 of the legitimacy scale ( $z = -3.63$ ). However, these values represented a continuous distribution and were retained. That is, in the histogram, there was not a break between the outliers and the next lowest score. No other outliers were identified. Each of the 73 items of the APLS showed the full range (i.e., 1–7) of responses. The case to variable ratio was greater than 10:1.

**Factor analysis.** An initial exploratory factor analysis was conducted on the 73 potential scale items. Principal Axis Factoring (PAF) with a promax rotation was chosen to allow potential factors to correlate (Gorsuch, 1983). The Kaiser-Meyer-Olkin measure of sampling adequacy was .988, and Bartlett's test of sphericity was significant,  $\chi^2(2628, N = 783) = 51,874.786$ ,  $p < .001$ , suggesting the data were factor-analyzable. Community estimates (extraction values used) in this initial factor analysis ranged from .198 (T31) to .785 (B8). The extraction sums of squared loadings showed that the first factor accounted for 51.724% of the variance, the second for 4.228% of the variance, and the third for 3.006% of the variance. All other potential factors accounted for 1.312% or less of the variance. An examination of the scree plot indicated one major break after the first factor and one smaller break after the third factor. The pattern matrix was then examined. Initial criteria for considering an item as being strong were factor loadings greater than .45 and no cross loadings above .30. This yielded a number of problematic items: B7, O49, O54, T24, M38, M37, I17, I14, C68, T30, T22, M39, C64, O45, O56, O47, C69, O57, and O60. These items were excluded, and another analysis was conducted.

The percentage of variance accounted for by each factor was similar to the case in the first analysis. However, the scree plot showed either a one- or two-factor solution. Several more items were identified as problematic. O52 and O53 loaded on only Factor 6. T25 cross-loaded, and T27 had a low loading.

Another iteration was run and showed similar results, with Factor 1 accounting for 55.245% of the variance, Factor 2 for 4.625% of the variance, and Factor 3 for 1.972% of the variance. Once again, the scree plot showed two breaks, and thus either a

one- or two-factor solution. For the next iteration in these exploratory analyses, we removed items that did not load on either Factor 1 or 2: I10, I15, B2, B5, B3, and T31.

In this subsequent analysis, 34 items loaded on Factor 1 (factor loadings > .571), one item cross-loaded and had a low loading on Factor 1, and nine items loaded on Factor 2 (factor loadings > .487). Items on Factors 1 and 2 were examined, and although nine items loaded strongly on Factor 2, all items were reverse-coded. Thus, rather than being conceptually useful, Factor 2 appeared to be a method factor. We therefore removed the following items: B4, O48, I11, M44, M41, I12, O58, O55, M34, and T26.

For this iteration, Factor 1 accounted for 64.659% of the variance. Examination of the scree plot clearly showed a one-factor solution, as indicated by a distinct L shape. Because there was only one factor, the solution could not be rotated. All factor loadings were strong (see Table 1 for the factor loadings and communality estimates on the 34 retained items). Two items, M43 and O51, showed adequate factor loadings but lower communality estimates. However, these communality estimates were adequate, and the items always loaded cleanly on Factor 1. Thus, no more items were removed, and the final set includes 34 items. As Table 1 indicates,

Table 1  
*Factor Loadings and Communality Estimates for 34 Items (Study 1)*

Item	Factor loading	Communality estimate
T21	.863	.744
B8	.859	.739
I16	.856	.733
NA71	.856	.733
O59	.853	.728
I9	.851	.724
T19	.845	.715
C62	.837	.701
C63	.835	.697
NA73	.832	.693
T32	.831	.691
C66	.831	.690
M35	.830	.689
NA70	.830	.688
T29	.828	.686
NA72	.827	.685
M40	.824	.680
T28	.824	.679
I13	.823	.678
T23	.823	.677
C67	.823	.677
B1	.819	.671
I18	.816	.665
C65	.815	.664
M42	.808	.653
O50	.795	.632
M33	.795	.631
B6	.790	.623
O46	.773	.597
M36	.744	.553
T20	.698	.487
O61	.662	.438
M43	.611	.373
O51	.519	.269

*Note.* T = trustworthiness; B = bias; I = quality of interpersonal treatment; NA = normative alignment; O = quality and organizational integrity; C = being part of the community; M = motivation.

Factor 1 contains items from all key aspects of the police legitimacy construct. Thus, rather than each element of police legitimacy's being a separate factor, the results suggest a single factor is most appropriate. We ran several other exploratory analyses; however, none demonstrated better loadings or were more conceptually clear.

**Additional analyses.** To determine whether the 34 APLS items related to any theoretically meaningful variables, we ran a series of correlations with the average score of the APLS. First, individuals who were older,  $r(781) = .245, p < .001$ ; more conservative,  $r(781) = .338, p < .001$ ; and female,  $r(781) = -.188, p < .001$ , tended to view the police as more legitimate. We next examined the relationship between participants' race and police legitimacy, classifying individuals as White (1) or minority (0), and found that White participants, compared to minority participants, tended to rate the police as more legitimate,  $r(781) = .141, p < .001$ . Our previous unpublished research has found that Asian American participants, compared to other minorities, have reported more positive police attitudes. Thus, two additional analyses were conducted: (a) excluding Asian Americans from analyses (i.e., comparing all other minorities to White participants) and (b) comparing only Hispanic and African American participants to White participants. Exclusion or inclusion of these participants did not change the effect. That is, the correlation between race and the police scale remained significant and positive. Finally, we found that having a family member or friend who is in any type of law enforcement was not related to police legitimacy,  $r(781) = .060, p = .096$ .

We also examined the reliability of the 34-item APLS. The Cronbach's alpha was .984, indicating very high reliability for the 34 items retained.

## Discussion

The goal of this study was to generate items tapping into various aspects of the police legitimacy construct. We were interested to see how the items would load in comparison to the key aspects of the construct in our nomological net. Through principal axis factoring, we found clear evidence of a one-factor solution, where items from all parts of our nomological net were represented: bias, quality of interpersonal treatment, trustworthiness, motivation, quality and organizational integrity, being part of the community, and normative alignment.

We also found promising initial results for the items as a scale in terms of theoretically meaningful relationships and scale reliability. Specifically, we found that individuals who viewed the police as more legitimate tended to be more conservative, older, and White. This is consistent with what we expected, given past research (Ren, Cao, Lovrich, & Gaffney, 2005; Schuck, Rosenbaum, & Hawkins, 2008). We also found that women tended to view the police as more legitimate. Some researchers have argued that women, comparatively, may have more positive police attitudes because men tend to have negative experiences with the police (Lai & Zhao, 2010). However, much of the research on sex and police attitudes has tended to be mixed (Brown & Benedict, 2002). Finally, we did not find a relationship between legitimacy items and knowing a member of law enforcement. This suggests that viewing the police as legitimate is not unduly influenced by

closely knowing one particular officer but rather from a broader assessment of police, which is ideal.

Although we found evidence for a one-factor solution, we wished to further explore the factor structure of the items on another set of data and to further test the relationship of the scale items to theoretically meaningful constructs, namely, social dominance and authoritarianism. We expected that greater police legitimacy would be related to a general submission to authority figures and norms (authoritarianism) and a greater preference for hierarchies and dominating low-status groups (social dominance). We also examined whether prior arrest was related to perceptions of police legitimacy.

## Study 2

### Method

**Participants.** Data from 304 MTurk participants were collected, using the same criteria for inclusion and compensation as in Study 1. Initial data screening showed that seven participants were either not from the United States or did not show location data, so they were excluded from analyses. This left a total of 297 participants (63.6% female,  $M_{\text{age}} = 36.07$ ) for data analysis.

**Attitudes Towards Police Legitimacy Scale.** Based on findings from Study 1, the original 73-item APLS was reduced to 34 items. In addition, to determine whether the police scale was capturing a more general attitude towards the police rather than legitimacy, three items were added to the scale assessing general police attitudes: "Police officers should get to the crime scene fast," "Police officers should do everything possible to help you," and "Police officer uniforms make it easy to spot who is an officer and who is not." We expected that these items would not load well on the police scale (items for the reduced, 34-item scale are presented in Appendix B).

**Social Dominance Orientation Scale.** The Social Dominance Orientation (SDO) scale (Pratto, Sidanius, Stallworth, & Malle, 1994) is a measure of the degree to which one believes the current social hierarchy is legitimate and just. The SDO consists of 16 items rated on a 7-point scale ranging from 1 (*very negative*) to 7 (*very positive*) and shows good internal reliability (Bostyn, Roets, & Van Hiel, 2016; Lindén, Björklund, & Bäckström, 2016). The items were averaged, with higher scores indicating higher beliefs that the current social hierarchy is just (Cronbach's alpha = .937). We expected this scale to have a moderate and positive relationship with the police scale.

**Right-Wing Authoritarianism Scale.** The Right-Wing Authoritarianism (RWA) scale assessed participants' willingness to obey authority they believe to be legitimate (Altemeyer, 2004). Participants completed the short version of the RWA (Zakrisson, 2005), consisting of 15 items rated on a 7-point scale ranging from 1 (*very negative*) to 7 (*very positive*). The items were averaged, with higher scores indicating greater willingness to obey authority (Cronbach's alpha = .907). We expected this scale to have a moderate and positive relationship with the police scale.

**Police-related demographic information.** Participants were asked, in addition to basic demographic information and police-related questions completed in Study 1, whether they had been previously arrested (yes–no).

**Procedure.** After consenting to participate, MTurk workers completed the APLS, the SDO, the RWA, police-related items, and demographic questions online. All items were randomized within each scale. Upon completing the study, participants were thanked and compensated.

## Results

**Data screening.** All values were in range and plausible, no missing values were identified, and all variables were adequately normally distributed. One case on the SDO scale was identified as an outlier ( $z = 3.66$ ). Upon examination of the histogram, this case was retained because it represented a continuous distribution; that is, there was not a break in the histogram between the outlier and the next highest score. The case to variable ratio for the legitimacy scale items was almost 9:1.

**Factor analysis.** An initial exploratory factor analysis, using Principal Axis Factoring (PAF) and a promax rotation, was conducted on the 34 potential scale items. The Kaiser-Meyer-Olkin measure of sampling adequacy was .981, and Bartlett's test of sphericity was significant,  $\chi^2(561, N = 297) = 12,096.93, p < .001$ . Community estimates ranged from .438 (O51) to .809 (NA72). The extraction sums of squared loadings showed that Factor 1 accounted for 69.037% of the variance. The scree plot clearly indicated a one-factor solution. Only one factor could be extracted, and thus the solution could not be rotated. All factor loadings were strong, with the smallest loading being .662 (O51; see Table 2 for the factor loadings and communality estimates on the 34 items of the APLS). Thus, no items were identified for removal. Several additional analyses were conducted, including bifactor modeling. However, none provided a better solution than did this initial analysis.

Next, we ran the same series of correlations as in Study 1 with the average score of the APLS. Political conservatives and those who were older tended to view the police as more legitimate,  $r(295) = .350, p < .001$ , and  $r(295) = .232, p < .001$ , respectively. Race and sex were not significantly correlated with police legitimacy,  $r(293) = .060, p = .302$ , and  $r(295) = -.044, p = .451$ , respectively. As in Study 1, two additional analyses were conducted: (a) excluding Asian Americans from analyses and (b) excluding all minorities except Hispanic and African American participants. Exclusion-inclusion of these participants did not change the effect. Finally, participants personally knowing someone in law enforcement was associated with greater legitimacy,  $r(295) = .147, p = .011$ .

The last series of correlations tested the relationship between previous arrest (0 = no, 1 = yes), the SDO, and the RWA. People who had been previously arrested tended to view the police as less legitimate,  $r(295) = -.156, p = .007$ . Finally, the SDO and the RWA were significantly and positively correlated with legitimacy,  $r(295) = .176, p = .002$ , and  $r(295) = .432, p < .001$ , respectively. That is, people who preferred hierarchy and domination over lower status groups and those who are more willing to submit to authorities and adhere to societal norms tended to view police as more legitimate.

Finally, to test how well the 34 scale items can differentiate general attitudes towards the police, we conducted a final exploratory factor analysis (EFA) including the 34 scale items and the three new general police attitude items. Examination revealed that

the new items did not load on Factor 1 and that some cross-loaded. This suggests that these items did not tap into the legitimacy construct specifically and that the scale does not simply reflect a general attitude towards police.

Reliability was examined on police legitimacy. The Cronbach's alpha was .987 and thus again demonstrated very high reliability.

## Discussion

The purpose of Study 2 was to continue to explore the factor structure of the remaining 34 items, as well as test the relationship between the items and potentially meaningful variables: the SDO and the RWA. The results of the Study 2 EFA were consistent with the results from Study 1. There was clear indication of a one-factor solution. Furthermore, there were no items that were indicated for removal based on factor loadings and communality estimates. Therefore, the 34 items retained constitute the full scale. This again suggests that individuals' police legitimacy beliefs contain the seven elements outlined earlier.

When comparing the analyses in Study 1 with that in Study 2, there were some consistencies. First, in Studies 1 and 2, political

Table 2  
*Factor Loadings and Communality Estimates for 34 Items (Study 2)*

Item	Factor loading	Communality estimate
NA72	.899	.809
B8	.879	.772
T28	.872	.760
O59	.869	.755
T19	.869	.755
I18	.869	.754
I13	.868	.753
B1	.866	.750
I9	.864	.747
I16	.862	.744
NA71	.860	.740
T29	.860	.740
T23	.856	.733
NA70	.854	.729
C66	.852	.726
C62	.851	.724
M35	.846	.715
NA73	.843	.710
T21	.840	.706
M33	.836	.699
M42	.836	.699
C63	.834	.695
M40	.834	.695
C67	.831	.690
B6	.818	.670
T32	.817	.667
O46	.816	.666
C65	.816	.666
O50	.811	.658
M36	.803	.645
M43	.722	.521
C61	.689	.475
T20	.680	.463
O51	.662	.438

*Note.* NA = normative alignment; B = bias; T = trustworthiness; O = quality and organizational integrity; I = quality of interpersonal treatment; C = being part of the community; M = motivation.

ideology and age were positively correlated with legitimacy. However, the relationship between participant race and sex were not correlated with legitimacy in Study 2. One explanation for this inconsistency is that the significant effects obtained in Study 1 were due to the large sample size. Indeed, the correlations were significant but exceedingly small. The smaller sample size in Study 2 may have rendered these effects not significant. Finally, in Study 2 the relationship between having a family member or friend who is in any type of law enforcement and police legitimacy was found to be positively correlated, whereas in Study 1, it was not significant. Although this is inconsistent in statistical significance terms, the  $p$  values, .096 versus .011, were relatively close, and because the APLS measures police legitimacy rather than general police attitudes, we predicted a very small effect or no effect. Thus, the values are in the range of what we expected.

In Study 2, our results also indicated that individuals high in police legitimacy tend to have greater preference for hierarchy in social systems, are more willing to adhere to societal rules, and are less likely to have been arrested. The SDO and the RWA are constructs that represent submission to authority figures and norms, as well as beliefs regarding preference for hierarchies and dominating low-status groups. Thus, it was expected that both constructs would be correlated with police legitimacy, because police officers are viewed as authority figures as well as potential enforcers of the current social hierarchy. Our findings were consistent with our expectations and past research (Gerber & Jackson, 2017; Saunders, Kelly, Cohen, & Guarino, 2016).

Although Study 2 demonstrated exploratory evidence on the factor structure and reliability of the legitimacy scale items, two points remained to be tested. First, the scale items require confirmation with a relatively large sample size. Second, the scale requires evidence that meaningful behavior can be predicted. This was the purpose of Studies 3a–3d.

### Studies 3a–3d

We hypothesized that, consistent with Studies 1 and 2, Study 3a would confirm the one-factor structure of the APLS. Because the time required to complete the APLS is brief and the number of participants for the confirmatory factor analysis quite large (at least 500), we first had all participants complete the APLS and then randomly assigned them to one study. These different studies constituted the different behaviors that the scale should predict. To assess predictive validity, we selected three behavioral outcomes from three very different domains.

First, perceptions of police officers likely affect how one evaluates officers' behaviors while on the job. For example, the United States has been rocked in recent years by several high-profile police shootings. What is clear is that citizens vary widely on their perceptions of when and under what conditions deadly force is acceptable. Study 3b tested the predictive ability of the APLS, using body camera footage of an actual police shooting to determine whether participants believed the officer shooting was justified. We expected that individuals high in police legitimacy would tend to perceive the police shooting as justified. Second, perceptions of police legitimacy might also affect the willingness to give to causes that support police officers. In Study 3c, participants allocated hypothetical funds to different charities, including a police charity. By using a prosocial behavioral measure, we

wanted to emphasize that the APLS would also be useful in predicting behaviors that *support* the police. We expected that those with higher APLS scores would be more likely to donate money to a hypothetical police charity. Finally, theorists have posited that perceptions of police legitimacy should be associated with law-abiding behavior (Paternoster et al., 1997; Tyler, 1990). Thus, we expected that as perceptions of legitimacy increase, law-abiding behavior should also increase. In Study 3d, participants completed measures of their past general criminal behavior, attitudes towards social dominance, and attitudes concerning right-wing authoritarianism. We expected higher APLS scores would be associated with less previous criminal behavior, higher SDO scores, and higher RWA scores.

### Method

**Participants.** A total of 760 participants were recruited from MTurk. For the confirmatory factor analysis (Study 3a), 91 participants were not located in the United States or did not provide location data, did not complete the study, failed attention checks, and/or had duplicate entries in the study, so we omitted them, which reduced the sample to 669. Although all participants completed the 34-item APLS, they were also randomly assigned to complete one of four tasks. Out of the 669 participants, 127 completed the police body camera task (Study 3b), 159 completed the resource-allocation task (Study 3c), and 147 completed several other measures related to police beliefs: General Crime Index, the SDO, and the RWA (Study 3d). The remaining 236 participants completed another task as part of a separate study, and although they were retained for analyses in the CFA, the results of that study are not reported here. The overall mean age was 38.60 ( $SD = 12.56$ ), 56.05% were female, and 78.33% were White–European American. Within each study, the demographics were very similar.

**Body camera video.** Participants viewed actual video from a fatal police shooting that occurred in 2014. In the video, an officer is entering the home of a hit-and-run suspect, where the suspect's girlfriend informs the officer that she believes the suspect is holding a knife. The officer makes several attempts to get the suspect within view and to drop the knife. The officer then discharges his weapon four times. This video has been used in previous research, where participants' average rating of whether the shooting was justified was  $-.50$  on a  $-5$  to  $5$  scale (Culhane, Boman, & Schweitzer, 2016). After viewing the video, participants were asked whether the officer was justified in shooting the suspect (yes–no, coded as 1 and 0, respectively) and to indicate on a 1–7 scale how justified the shooting was, whether the officer gave adequate warning before firing, whether the officer had no other option but to shoot the suspect, and the degree they believed the officer's life was in danger. Higher scores indicated higher agreement with each statement.

**Resource-allocation task.** Participants were asked to imagine they had \$100 to donate to five fictional charities: The Law Enforcement Support Fund, End Hunger Now, The International Association for the Treatment of Communicable Diseases, Americans Against Child Abuse, and the South American Outreach Ministry. A brief description of each charity was provided, with each description being similar in length (58–59 words). The description for the Law Enforcement Support Fund and Americans Against Child Abuse are provided as examples here:

*Law Enforcement Support Fund.* The Law Enforcement Support Fund provides special financial assistance to police officers across the United States of America. Your support helps police officers wounded in the line of duty pay medical bills and provides financial assistance to the families of officers wounded or killed in the line of duty. Now more than ever the police need your help.

*Americans Against Child Abuse.* Our mission is to prevent the abuse and neglect of all children in the United States. At Americans Against Child Abuse, our mission is to ensure a healthy and safe environment for all developing children. We promote services that improve child well-being in all 50 states and develop programs that help to prevent all types of abuse and neglect.

Participants were instructed to donate any amount they wished to any of the five charities in \$1 increments, as long as the total donations summed to \$100. Participants were also instructed that they did not have to give money to every charity (i.e., they could donate all money to one charity or spread it between two, three, four, or all five).

**General Crime Index.** The General Crime Index (GCI; Tittle, Ward, & Grasmick, 2003) is a 12-item scale assessing self-reported illegal behavior. Participants are asked to respond yes or no on items such as “As an adult, have you ever threatened someone with physical violence?” or “In the past 5 years, have you ever gambled illegally on a sporting event or other situation?” Yes responses were coded as 1, and no responses were coded as 0. The items were summed, with higher scores indicating increased, self-reported illegal behavior (Cronbach’s alpha = .728).

**Procedure.** First, participants were directed to a website to complete the study online. They were randomly assigned to participate in one of the four behavioral tasks, three of which are reported in this article: the police body camera task, the resource-allocation task, and the self-report measures task. All participants completed the police-related demographic questions administered in Study 2.

In the police body camera task, participants were instructed to watch the video of a police shooting and rate whether the officer was justified and answer the four additional questions related to the police officer’s decision to shoot. Next, they completed several attention-check questions regarding details in the video (e.g., “What was the suspect holding?”), the APLS, and demographic information. The order of the APLS and the video task were counterbalanced.

In the resource-allocation task, participants always completed the resource-allocation task prior to completing the APLS to control for the potential influence of the police scale on the allocation task. Participants were asked to imagine they had \$100 to donate to five fictional charities. Descriptions of the charities were presented at one time, and participants were instructed to donate any amount they wished to any charity in \$1 increments, as long as they “spent” the \$100. After allocating their donation, participants answered an attention-check item, where they were asked to select the charities they were previously shown in the allocation task from a list of potential charities. Last, participants filled out the APLS and demographic information.

Finally, in the self-report measures task, participants completed the GCI, the RWA (Cronbach’s alpha = .920), the SDO (Cronbach’s alpha = .959), and the APLS measures (counterbalanced) and provided demographic information. Attention-check questions

(e.g., “Please select option five for this item”) were embedded in each scale to ensure accurate responses.

### Results: Study 3a

**Analytic strategy.** A one-factor model with all 34 items was specified. A robust maximum-likelihood estimator was used. This uses a Huber-White “sandwich” estimator to adjust standard errors and can be robust to nonnormality and nonindependence of observations. Indices of model fit were root-mean-square error of approximation (RMSEA), standardized root-mean-square residual (SRMR), comparative fit index (CFI), and Tucker–Lewis index (TLI). Adequate model fit was based on RMSEA values less than .08, SRMR values less than .10, and CFI and TLI values greater than .90 (Bentler, 1990; Kline, 2005). Close model fit was based on RMSEA values less than .06, SRMR values less than .08, and CFI and TLI values greater than .95 (Hu & Bentler, 1999). Analyses were conducted using MPlus Version 6 (Muthén & Muthén, 1998–2011).

**Confirmatory factor analysis.** The model of the hypothesized one-factor structure was significant,  $\chi^2(527, N = 669) = 1,443.805, p < .001$ , and provided the following fit indices: RMSEA = .051, 90% confidence interval (CI) [.048, .054], SRMR = .024, CFI = .945, TLI = .941. These results indicate close to adequate fit on all fit indices. Several modification indices that would improve model fit were indicated. These modifications were weighed against overcomplicating the model, and because the fit was already strong, no modifications were pursued (factor loadings and standard errors are presented in Table 3).

### Results: Studies 3b–3d

**Data screening.** All values were in range and plausible, and no missing values were identified. However, 40 participants failed manipulation checks specific to each task (14 in Study 3b, 22 in Study 3c, 4 in Study 3d) thus reducing sample sizes to  $n = 113$  in Study 3b,  $n = 137$  in Study 3c, and  $n = 143$  in Study 3d. Most variables were adequately normally distributed, and several outliers were identified. One individual in the police body camera task reported having an income greater than \$200,000 ( $z = 3.897$ ), and two individuals had slightly higher GCI scores ( $z = 3.846$  and  $3.336$ ). Examination of histograms showed these data represented a continuous extension of the higher end of income and GCI scores. Additionally, results did not change when excluding—including outliers; thus, they were retained for data analysis. In the self-reported crime task, one individual had a high SDO score ( $z = 3.528$ ), and one reported age as 99 ( $z = 4.620$ ). Examination of the histograms showed that these scores were far from the next highest score in their respective distributions; thus, they were removed from the main analyses. The dependent variable of allocating money to the police charity was slightly kurtotic (4.352), and eight individuals were identified as potential outliers (all  $z$ s = 3.367). A square-root transformation was performed on the amount of money donated to the police charity to address these outliers. Analyses showed similar results whether the dependent variable was transformed or not; the police scale average remained a significant predictor and explained more of the variance compared to all other variables in Study 3c. Thus, data were not transformed or removed, given that these values were within the range of

Table 3  
Factor Loadings for the CFA Model (Study 3a)

Item	Loading	SE	Std. loading
Item 1	1.000	.000	.895
Item 2	.907	.030	.830
Item 3	1.059	.030	.880
Item 4	.967	.030	.866
Item 5	.968	.028	.852
Item 6	1.084	.032	.887
Item 7	.934	.029	.856
Item 8	1.016	.033	.832
Item 9	.872	.042	.740
Item 10	.952	.030	.850
Item 11	.962	.033	.837
Item 12	1.032	.030	.879
Item 13	1.027	.032	.870
Item 14	1.096	.031	.879
Item 15	.913	.028	.856
Item 16	.890	.032	.814
Item 17	.934	.026	.844
Item 18	.900	.030	.864
Item 19	.864	.034	.810
Item 20	.683	.035	.708
Item 21	.981	.032	.796
Item 22	.916	.034	.794
Item 23	.713	.049	.579
Item 24	.947	.032	.869
Item 25	.636	.036	.639
Item 26	1.037	.029	.877
Item 27	.888	.034	.829
Item 28	.846	.031	.811
Item 29	.967	.032	.838
Item 30	.869	.032	.841
Item 31	1.037	.030	.872
Item 32	.978	.030	.879
Item 33	1.021	.030	.879
Item 34	.954	.027	.865

Note. CFA = confirmatory factor analysis; Std. = standard.

responses possible (participants could allocate all or none of their donation to each charity), the responses were theoretically meaningful, and transformation would overly complicate the interpretation while only slightly improving the distribution. Further, we conducted two additional analyses across Studies 3b–3d excluding either Asian American or all racial minorities except African American and Hispanic participants. As with Studies 1 and 2, the effects did not change based on exclusion–inclusion of these participants. Thus, all racial minorities were retained for data analysis. Race was coded as 0 (racial minority) and 1 (White). The police scale showed strong reliability across the three tasks (Cronbach's alpha = .986, .988, and .985, for the police body camera, police charity, and self-reported crime tasks, respectively).

**Study 3b: Police scale predicting police shooting justification.** A logistic regression examining whether the APLS predicted perceiving a police officer shooting as justified was significant,  $\chi^2(1, N = 113) = 28.642, p < .001$ . As hypothesized, the odds of perceiving the police shooting as justified increased 2.556 times per unit increase in police scale scores ( $B = .939, SE = .207, p < .001, 95\% \text{ CI for } OR [1.702, 3.839]$ ).

Next, we conducted a hierarchical logistic regression to determine whether the APLS reliably predicted perceptions that the police officer was justified in the shooting, beyond other potential

predictors. In Step 1 of the model, race, age, sex, political ideology, previous law enforcement history, and previous arrest were entered as predictors of justification. In Step 2, the APLS average was added to the model. The first model was significant,  $\chi^2(6, N = 113) = 12.971, p = .043$ . Specifically, the odds of saying the police officer was justified in shooting the individual was 1.453 times more likely if the person had a conservative political ideology ( $B = .373, SE = .151, p = .013, 95\% \text{ CI for } OR [1.081, 1.952]$ ). No other variables reliably predicted whether the shooting was justified ( $ps > .158$ ). When the police scale was added, the overall model was significant,  $\chi^2(7, N = 113) = 31.332, p < .001$ . More important, higher scores on the police scale reliably predicted that the police officer was justified in shooting ( $B = .973, SE = .262, p < .001, OR = 2.645, 95\% \text{ CI for } OR [1.582, 4.423]$ ) above all other predictors (all other  $ps > .210$ ).

Last, linear regressions showed that the APLS reliably predicted how justified the police officer was, whether he gave adequate warning, whether he had no other option but to shoot, and whether his life was in danger (all  $ps < .001$ ).

**Study 3c: Police scale predicting donating to police charity.** A linear regression examining whether APLS scores were related to the amount of money donated to the police charity was significant,  $F(1, 135) = 19.469, p < .001, R^2 = .126, 95\% \text{ CI } [.040, .232]$ . Higher police legitimacy scores were related to increased donations to the police charity. Next, a hierarchical linear regression was conducted, using the same procedure as in Study 3b. Model 1 was significant,  $F(6, 129) = 2.476, p = .027$ . Specifically, political conservatives donated more to the police charity ( $B = 5.165, SE = 1.509, p = .001, sr^2 = .081, 95\% \text{ CI } [.015, .179]$ ). No other variables reliably predicted police support ( $ps > .201$ ). When the APLS average was added in Step 2, the model change was significant,  $\Delta F(1, 128) = 15.245, p < .001$ . Specifically, higher scores on the APLS were significantly related to higher police charity donations above most other predictors ( $B = 6.560, SE = 1.680, p < .001, sr^2 = .095, 95\% \text{ CI } [.024, .190]$ ), apart from sex ( $B = 8.004, SE = 4.107, p = .053, sr^2 = .024, 95\% \text{ CI } [.000, .087]$ ). Men were marginally more likely to donate to the police charity. All other variables did not reliably predict donating to the police charity ( $ps > .094$ ).

**Study 3d: Police scale predicting self-reported crime.** A linear regression examining whether the APLS reliably predicted GCI scores was marginally significant,  $F(1, 139) = 3.699, p = .056, R^2 = .026, 95\% \text{ CI } [.000, .097]$ . Higher APLS scores were related to lower GCI scores. Next, using the same procedure as before, Model 1 of the hierarchical linear regression did not reach traditional levels of significance,  $F(6, 134) = 2.091, p = .058$ . When the APLS was added in Step 2, the model was significant,  $\Delta F(1, 133) = 4.062, p = .046$ . Specifically, higher scores on the APLS predicted lower scores on the GCI, predicting beyond most variables in the model ( $B = -.277, SE = .137, p = .046, sr^2 = -.027, 95\% \text{ CI } [.000, .096]$ ), except for age ( $B = -.032, SE = .014, p = .024, sr^2 = -.035, 95\% \text{ CI } [.000, .109]$ ). As age increased, there was a decrease in reported crime on the GCI. Last, correlations between the APLS, the RWA, and the SDO were examined. Higher APLS scores were reliably related to higher scores on both the RWA ( $r = .268, p = .001$ ) and the SDO ( $r = .207, p = .014$ ).

### Discussion: Studies 3a–3d

The goal of Studies 3a–3d was to first test the hypothesized one-factor solution of the APLS and then to examine the scale's predictive validity. The results of Study 3a, the confirmatory factor analysis, clearly showed a one-factor solution for the APLS, as evidenced by the fit indices and the factor loadings. In Studies 3b–3d, we tested the relationship of the APLS across several contexts related to police attitudes: justification of police shooting, resource allocation, and self-reported crime.

Results across Studies 3b–3d showed strong evidence of the predictive validity for the APLS. Higher APLS scores were related to perceiving a police-related shooting as justified, above age, sex, race, political ideology, previous law enforcement history, and previous arrests. Higher APLS scores were related to a person's willingness to donate money to a police charity beyond all other predictors. Finally, higher APLS scores were positively related to authoritarianism and social dominance orientation and negatively related to self-reported crime, although weakly to the latter and at times being of only marginal significance.

### General Discussion

The goal of this research was to develop and validate a scale designed to measure everyday individuals' attitudes towards police legitimacy, because the current literature lacks a scale researchers and police organizations alike can use to consistently assess attitudes towards police. In Studies 1 and 2, we developed items and explored their factor structure. The results indicated a one-factor solution, and this was confirmed in Study 3a. Finally, showing predictive validity for the scale, we found in Studies 3b–3d that the APLS predicted officer justification in a police shooting and hypothetical donating to a police charity, as well as self-reported crime, authoritarianism, and social dominance orientation. Throughout all these studies, the APLS demonstrated high reliability. This is at least moderate evidence of the validity and reliability of the APLS. Furthermore, these results suggest that bias, quality of interpersonal treatment, trustworthiness, motivation, quality and organizational integrity, being part of the community, and normative alignment are elements that constitute legitimacy but do not form separate dimensions.

### Implications and Future Directions

What factors constitute legitimacy is debated. For example, Tyler & Jackson (2014) argued that legitimacy constitutes three separate but related factors: obligation, trust and confidence, and normative alignment. Tankebe and colleagues (2016) have argued that four related factors constitute police legitimacy (distributive fairness, procedural fairness, lawfulness, and effectiveness) and that rather than being part of the construct, obligation should be viewed as something that legitimacy predicts. Based on the evidence here, we cannot make any firm conclusions about the structure of legitimacy. However, our results clearly point to something different from what is argued by either group of researchers. Although we included items that tapped into factors such as trust and confidence, normative alignment, and fairness, these did not form separate factors. Rather, our results indicated that police legitimacy may contain all of these elements and that

they are not separable. A future direction may be to directly compare these different approaches and determine which provides the best predictor of, for example, how a police shooting is viewed.

In a related vein, another future direction is to investigate how the APLS is related to other behaviors, such as cooperating with the police. Understanding and being able to predict whether people will cooperate with the police is valuable. Tyler and Jackson (2014) found that their conceptualization of legitimacy was related to compliance and cooperation with authorities. If a valid and reliable scale of police legitimacy is developed, police departments and researchers can administer it in their communities, identify problematic areas, and work to increase the legitimacy of their officers, which would potentially increase cooperation and compliance with police. For example, police officers in Camden, New Jersey, have made changes regarding their interactions with citizens, such as administering fewer tickets in traffic stops and training officers to hold their fire or physically move away from suspects wielding weapons to deescalate situations (Goldstein, 2017). Having a legitimacy scale can aid police in determining whether their policy changes significantly impact citizens' attitudes towards the police. Additionally, psycholegal researchers might use the scale in studies in which police legitimacy might mediate outcomes. For example, there has been a recent interest in how mock jurors make decisions in cases involving police and civilian witnesses (Cole, Cohn, & Foster, 2016). Perceptions of police legitimacy might mediate decisions in cases such as these, and having a validated scale would be beneficial.

In showing predictive validity for the APLS, we focused on how people view police shootings and a proactive behavior: donating to the police. Nonetheless, it will be valuable for future research to demonstrate that the APLS can also predict cooperation and compliance with police. Further, the APLS was weakly related to self-reported crime. Future research should examine whether police legitimacy is related to criminal behavior and whether these effects are attenuated by known predictors of criminal behavior (e.g., self-control).

### Limitations

Although we believe there is evidence that the APLS is a valid police legitimacy scale and will likely be useful to researchers, this work is not without its limitations, including the sample, scale length, and the exclusion of police effectiveness and obligation items. First, all participants in this research were sampled from Amazon's MTurk. Thus, we have based this scale on only one population. With only an MTurk sample, and no community or student samples, it remains to be seen how well this can be replicated in other populations. There are also some substantial limitations to using MTurk data. For example, it is not possible to control the environment and study parameters, which potentially could introduce greater variation (Bartneck, Duenser, Moltchanova, & Zawieska, 2015). However, this research was not assessing reaction times, and it is difficult to make the argument that different screen sizes, for example, would affect answering questions about police. We would also point out that MTurk has been identified as being particularly useful in scale construction; the samples drawn from MTurk have tended to have more diverse characteristics than do student samples, and empirically speaking, the differences that do exist between MTurk and online student

samples are often so small that it does not have a practical consequence (Bartneck et al., 2015; Buhrmester, Kwang, & Gosling, 2011; Stritch, Pedersen, & Taggart, 2017). Nonetheless, replicating these results with community and student samples would be beneficial. For example, a community sample could allow for collecting a larger sample of racial minorities, because the current research found inconsistent effects of race and legitimacy.

The second limitation is the length of the scale. The APLS is a 34-item scale, and although there are certainly far lengthier scales, the APLS cannot be considered brief. Using relatively conservative criteria for item inclusion, we could not justify the removal of further items. However, in the future, it may be useful to specifically develop a shorter version of the APLS.

The third and most substantial limitation is regarding the exclusion of police effectiveness and obligation items. In defining our nomological net, we excluded items that concern the effectiveness of police, which is argued to be a component of legitimacy by Tankebe (2013), and items that concern obligation to obey, which has also been argued to be a component by Tyler and Jackson (2014). For those researchers who view effectiveness or obligation as critical components of legitimacy, our scale is likely to be somewhat unsatisfying. Indeed, it may have been simpler to just include these components anyway and explore the data. However, there is no one accepted model of legitimacy, and it is an empirical matter as to the core features of legitimacy. Our definition of *police legitimacy* focused specifically on approval of the police based on who they are and what they do, rather than their effect on society or the potential consequences of having police legitimacy. Furthermore, our goal here was to produce a scale to aid in the research of police legitimacy. We hold no paternalistic affection for our conceptual model of legitimacy. Future research could test whether the inclusion of effectiveness and/or obligation items improves the scale. If the scale is improved, this would suggest our definition of *police legitimacy* was too specific. A revised version could then be created and the literature moved forward. Similarly, one could test path models where effectiveness predicts legitimacy, which then predicts obligation, to test the hypothesis we advanced in the introduction that effectiveness is an antecedent of, and obligation a potential consequence of, legitimacy.

## Conclusions

Our perceptions of the legitimacy of police have a range of societal implications, such as compliance with the law (Tyler & Jackson, 2014). The scale developed here allows researchers to monitor public perceptions of the police in a valid and reliable manner. Further, the legitimacy scale can be a useful tool to determine how these attitudes relate to behavior and how these attitudes and police–citizen interactions might be improved. The authors hope that future research can use the scale to help repair and improve the relationship between police and citizens across the nation.

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(Appendices follow)

### Appendix A

#### Items for the Initial 73-Item Attitudes Towards Police Legitimacy Scale

Component	No.	Item
Bias	B1	Police officers usually make fair decisions when enforcing laws.
	B2	Police officers treat minorities differently than White people. <u>R</u>
	B3	Police officers do not unfairly target the poor.
	B4	Everyone is treated equally by the police.
	B5	Police officers unfairly target racial minorities during their investigations. <u>R</u>
	B6	Police officers usually have a reason when they stop or arrest people.
	B7	People who say they were treated poorly by the police probably did something to deserve that treatment.
	B8	Police do their best to be fair to everyone.
	B9	Police officers treat people with respect.
Quality of interpersonal treatment	I10	I fear being talked to by police. <u>R</u>
	I11	Police officers think they are better than everyone else. <u>R</u>
	I12	Police officers treat people as if they were lower than them. <u>R</u>
	I13	Police officers communicate well with people.
	I14	Police officers typically over react. <u>R</u>
	I15	If I were to interact with a police officer, I would be nervous. <u>R</u>
	I16	The presence of police makes me feel safe.
	I17	Police officers are generally hostile. <u>R</u>
	I18	Police officers are generally kind.
Trustworthiness	T19	If I have a problem, I feel confident that the police can help me solve it.
	T20	I'm not afraid to call the police when I need to.
	T21	People should trust the police to help.
	T22	Police officers consider all evidence they collect before making a decision.
	T23	I feel that police officers are willing to listen to me when I come into contact with them.
	T24	Law enforcement agencies are corrupt. <u>R</u>
	T25	Most police are corrupt. <u>R</u>
	T26	Police are likely to take bribes. <u>R</u>
	T27	Police officers fabricate evidence to make an arrest. <u>R</u>
T28	I believe what police officers tell me.	
T29	I can rely on police officers to ensure my safety.	
T30	When interacting with the police, I would do what they tell me to do.	
T31	Police are too slow to arrest people when they've done something wrong. <u>R</u>	
T32	I feel relieved to see police officers when I am out in the community.	
Motivation	M33	Police officers desire justice.
	M34	Police officers give tickets to meet department quotas. <u>R</u>
	M35	People become police officers to serve their communities.
	M36	The explanations that police officers give for a stop are typically reasonable.
	M37	Police officers are just looking for an excuse to fine or arrest people. <u>R</u>
	M38	Law agencies are primarily concerned with collecting money. <u>R</u>
	M39	Police officers only use force when it is really necessary.
	M40	Police officers take their duty to protect and serve seriously.
	M41	People become police officers to gain power over others. <u>R</u>
M42	People become police officers to help others.	
M43	People become police officers because they want to maintain order.	
M44	Police officers like telling others what to do. <u>R</u>	
Quality and organizational integrity	O45	If a police officer does something bad, I believe the law enforcement agency will take care of it.
	O46	Law enforcement agencies hire the best people available.
	O47	You don't have to be smart to be a police officer. <u>R</u>
	O48	Police officers think they are above the law. <u>R</u>
	O49	Anyone can meet the requirements to become a police officer. <u>R</u>
	O50	People should be confident that police officers are only there to help.
	O51	Police officers are held to higher standards than regular citizens.

(Appendices continue)

## Appendix A (continued)

Component	No.	Item
Being part of the community	O52	Police departments hire enough police officers.
	O53	Police officers are paid enough for what they do.
	O54	Police officers are poorly trained <u>R</u>
	O55	Police officers are loyal to each other rather than the community <u>R</u>
	O56	Police officers who are bad apples usually get kicked off the police force.
	O57	Police officers are incompetent. <u>R</u>
	O58	When a police officer does something bad, it is often "covered up." <u>R</u>
	O59	For the most part, police do a good job maintaining order in society.
	C60	Police officers are not valued members of my community. <u>R</u>
	Normative alignment	C61
C62		Police officers' interactions with others makes me feel like they are part of my community.
C63		Police officers' goals are to protect the community.
C64		I would not respect any politician or community leader who criticizes the police.
C65		Police officers are a welcomed presence at community events.
C66		My community is a better place because of the police
C67		Most police officers care about the communities they work in.
C68		Police officers do not act with integrity. <u>R</u>
C69		Punishments for police officers breaking the law are the same as for members of the community.
NA70		Most police officers define right and wrong the same way that I do.
	NA71	Police officers uphold values that are important to me.
	NA72	The police usually act in ways consistent with my ideas about what is right and wrong.
	NA73	The police and I have many values and beliefs in common.

## Appendix B

## Items for the Final 34-Item Attitudes Towards Police Legitimacy Scale

No.	Item
1	Police officers usually make fair decisions when enforcing laws.
2	Police officers usually have a reason when they stop or arrest people.
3	Police do their best to be fair to everyone.
4	Police officers treat people with respect.
5	Police officers communicate well with people.
6	The presence of police makes me feel safe.
7	Police officers are generally kind.
8	If I have a problem, I feel confident that the police can help me solve it.
9	I'm not afraid to call the police when I need to.
10	People should trust the police to help.
11	I feel that police officers are willing to listen to me when I come into contact with them.
12	I believe what police officers tell me.
13	I can rely on police officers to ensure my safety.
14	I feel relieved to see police officers when I am out in the community.
15	Police officers desire justice.
16	People become police officers to serve their communities.
17	The explanations that police officers give for a stop are typically reasonable.
18	Police officers take their duty to protect and serve seriously.
19	People become police officers to help others.
20	People become police officers because they want to maintain order.
21	Law enforcement agencies hire the best people available.
22	People should be confident that police officers are only there to help.
23	Police officers are held to higher standards than regular citizens.
24	For the most part, police do a good job maintaining order in society.

(Appendices continue)

Appendix B (*continued*)

No.	Item
25	Police officers are respected by the communities they serve.
26	Police officers' interactions with others makes me feel like they are part of my community.
27	Police officers' goals are to protect the community.
28	Police officers are a welcomed presence at community events.
29	My community is a better place because of the police.
30	Most police officers care about the communities they work in.
31	Most police officers define right and wrong the same way that I do.
32	Police officers uphold values that are important to me.
33	The police usually act in ways consistent with my ideas about what is right and wrong.
34	The police and I have many values and beliefs in common.

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