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The Importance of Outcome Fairness: Revisiting the Role of Distributive Justice

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The Importance of Outcome Fairness: Revisiting the Role of Distributive Justice

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DEDICATION

For Jessica and Molly. You are my strength and my inspiration.

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Geoff Alpert was featured in an article in *The Atlantic* magazine for a series entitled "Standing on the Shoulders of Giants." I cannot think of a more apt description for how I feel about getting to work with him every day. His mentorship has shaped me as a scholar and as a person and I know that I am incredibly lucky to have been around such an amazing person.

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ABSTRACT

Distributive justice, or the perceived fairness of outcomes, has played a minimal role in research into procedural justice and legitimacy in policing. However, allegations of racial bias that have contributed to the present legitimacy crisis in policing are more consistent with the concept of distributive justice than procedural justice. As such, the present study attempts to re-orient distributive justice within policing research. This study proposes that individuals infer the fairness of outcomes from the treatment that they receive from police officers. These judgments about outcome and treatment then combine to influence individuals' perceptions of the legitimacy of police. In addition to testing this theoretical framework, the present study proposes a new concept, justice-restoring responses, from the field of social psychology. Justice-restoring responses are actions individuals take after experiencing injustice to rectify the injustice they experienced. In the case of policing, these actions may take the form of complaints filed against police officers regarding the interaction. Procedural justice, distributive justice, and outcome favorability are proposed as potential predictors of justice-restoring responses. To test these proposals randomized vignettes with varying conditions of procedural justice and outcome favorability were assigned to a national convenience sample. Structural equation modeling was then used to assess the relationships between the concepts of interest.

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CHAPTER 1

INTRODUCTION

Developing trust between the police and the communities they protect has become a primary concern for policing scholars, law enforcement executives, and policymakers alike. In particular, allegations of racial bias in policing that stem from the shootings of unarmed African Americans in various cities across the United States have caused a crisis in public trust in the police (Nix & Wolfe, 2015, 2016; Pyrooz et al., 2016; Rosenfeld, 2016; Wolfe & Nix, 2016). Tyler's (1990) theory of police legitimacy argues that the primary contributor to legitimacy evaluations is procedural justice (or the perceived fairness of the process used to reach a decision), but that perceptions of distributive justice (or the perceived fairness of outcomes) are also an important predictor of legitimacy attitudes. The current crisis in public confidence in policing lends itself to a distributive, rather than procedural, claim of injustice due to its focus on racial bias in policing outcomes such as stops, searches, arrests, and use of force. Yet, criminological research into claims of racial bias tend to focus on the objective question of whether injustice exists (e.g., comparing aggregate stop data to racially sensitive benchmark data), rather than why individuals' subjective perceptions of injustice are present.

To date, distributive justice remains a theoretically underdeveloped concept in the field of criminal justice. By contrast, the field of social psychology has extensively developed definitions, theoretical propositions, and potential outcomes of distributive justice over the past several decades (e.g. Adams, 1965; Folger, 1986; Jasso, 1980;

Markovsky, 1985). Using the existing literature on justice in the field of social psychology, this dissertation intends to further refine Tyler's (1990) theory of procedural justice and legitimacy. In particular, this dissertation proposes that perceptions of procedural justice influence an individual's perceptions of distributive justice. Additionally, a new outcome for the field of criminal justice is borrowed from social psychology – justice-restoring responses. Justice-restoring responses are actions, such as filing a complaint, taken directly in response to a sense of injustice, in an attempt to rectify the perceived injustice.

The dissertation thus proceeds as follows: Chapter 2 reviews the history and development of justice frameworks and the theories of distributive and procedural justice. Chapter 3 reviews the state of the existing literature on justice frameworks in criminology and criminal justice. Chapter 4 then develops an adapted theoretical model that re-orients distributive justice within the existing Tylerian model of procedural justice while also including a new outcome of justice evaluations, justice-restoring responses. A method for testing these propositions is presented in Chapter 5. Chapter 6 presents results testing the propositions. Finally, Chapter 7 reviews the refined theoretical model and discusses its implications.

CHAPTER 2

HISTORY AND DEVELOPMENT OF JUSTICE FRAMEWORKS

For centuries, research on "justice" has focused on the question of what is fair or

what is perceived to be fair. Philosophers have tackled the issue since the times of Plato

and Aristotle (Fleischacker, 2004), but scientific research on the subject exploded with

the emergence of the field of social psychology and the contributions of scholars such as

Homans (1961), Adams (1965), Thibaut and Walker (1975), and Lind and Tyler (1988).

Criminology and criminal justice entered this field relatively late – especially for a field

with justice in its name – with Tyler's (1990) seminal work *Why People Obey the Law*.

Throughout the development of justice research, scholars have focused on three

types of justice perceptions: distributive justice, procedural justice, and interactional

justice (Brockner et al., 1997; Hegtvedt, 2006; and Tyler, 1990). Distributive justice

evaluates the perceived fairness of the distribution of outcomes among a group (Adams,

1965; Folger, 1986; Jasso, 1980; Markovsky, 1985). Procedural justice examines the

perceived fairness of the process used to reach the decision regarding outcomes (Lind &

Tyler, 1988; Thibaut & Walker, 1975, Tyler, 1990). Interactional justice focuses on the

perceptions of the treatment an individual receives by the decision-maker (Bies, 2001;

Bies & Shapiro, 1987). Interactional justice and procedural justice have considerable

overlap, with both highlighting concepts such as respect, neutrality, and honesty (Bies,

2001; Hegtvedt, 2006; Tyler, 1990). As a result, some scholars have merged the concepts

of interactional and procedural justice (see discussion in Tyler & Blader, 2003; c.f. Colquitt, 2001).

While the concept of justice is important as a goal in and of itself, social psychologists have also focused on the consequences of feelings of injustice and unfairness. For criminologists in particular, perceived fairness in interactions with criminal justice personnel has been shown to be related to many positive outcomes including the improved legitimacy of criminal justice institutions (Hough et al., 2010; Reisig, Bratton, & Gertz, 2007; Reisig, Tankebe, & Meško, 2012; Sunshine & Tyler, 2003; Tankebe, 2013; Tyler, 1990), cooperation with legal authorities (Bradford, 2014; Jackson et al., 2012a; Reisig & Lloyd, 2009; Reisig et al., 2007; Reisig et al., 2012), compliance with legal authorities and the law (McLean & Wolfe, 2016; Paternoster et al., 1997; Reisig et al., 2007; Tyler, 1990), and public confidence and support for legal authorities (Bradford, Jackson, & Stanko, 2009; Jackson & Sunshine, 2007; Sunshine & Tyler, 2003).

While the positive outcomes from the perceived fairness of criminal justice actors have been relatively well documented, there is still indeterminacy in the theoretical underpinnings of these relationships. Tyler's (1990) original work on perceptions of justice and the criminal justice system highlighted the importance of legitimacy as a mediator between perceptions of justice and the positive outcomes of compliance with legal authorities and the law. Other theories, such as the group-value model (Lind & Tyler, 1988) and the group engagement model (Tyler & Blader, 2003), argue that social identity serves as an important link between perceptions of fairness and compliance with group norms. Finally, criminologists have also argued that perceived injustice acts as a

strain that can cause negative emotions leading individuals to resort to maladaptive coping mechanisms, such as criminal behavior (Agnew, 1992). Though the intervening mechanism is still debated, it is generally agreed upon that perceptions of fairness are linked to a variety of positive outcomes.

Scholars have also debated the relative importance of procedural justice and distributive justice. Early research on justice focused almost exclusively on distributive justice (Adams, 1965; Homans 1961), while later research began to highlight the importance of procedural justice (Thibaut & Walker, 1975; Lind & Tyler, 1988). Within the field of criminology, Tyler (1990) originally presented both distributive justice and procedural justice as antecedents of legitimacy evaluations with a greater emphasis on the role of procedural justice. Later research, however, began to de-emphasize distributive justice with scholars describing Tyler's (1990) legitimacy model as the "process-based model" (Hough et al., 2010; Reisig & Bain, 2016; Reisig & Lloyd, 2009; Tyler & Huo, 2002; Wolfe, 2011; Wolfe & Piquero, 2011). While some of this research has continued to examine the importance of distributive justice in research on perceptions of justice in criminology (Engel, 2005; Reisig et al., 2007; Wolfe et al., 2016; Wolfe & Piquero, 2011), much of it has dropped distributive justice altogether (Bradford, 2014; Bradford et al., 2009; Jackson et al., 2012). Recently, Tankebe (2013) argued for a re-conceptualization of criminology's research on legitimacy and justice frameworks with renewed focus on distributive justice (see also, Sahin et al., 2017). Due to the limited research on distributive justice, its role in the larger justice framework of criminal justice, especially with regards to legitimacy, remains uncertain.

The Philosophy of Justice

At its core, justice research is concerned with the question of what is considered fair or just. Early academic writings on justice were concerned with the objective standard of distributive justice (Fleishacker, 2004). That is to say, scholars were not concerned so much with what individuals considered to be fair, but what distribution of outcomes achieved some philosophical standard of justice. This research dates back to the writings of Aristotle, but can be traced through a number of other philosophers such as Adam Smith, Jean-Jacques Rousseau, Immanuel Kant, John Rawls, and Karl Marx (Fleishacker, 2004).

Theories and philosophies of distributive justice tend to follow one of three principles – equity, equality, or needs (Hegtvedt, 2006). The principle of equity argues that the distribution of resources should be commensurate to the contributions an individual makes to society. An equality principle argues for the objectively equal distribution of resources regardless of the individual's contributions. Finally, the needs principle argues for the distribution of outcomes based on the needs of the individual (Hegtvedt, 2006). The most prominent philosophers of justice, such as Aristotle, Adam Smith, and John Rawls, tended to focus on the idea of equity in the distribution of resources among citizens in a society (Fleishacker, 2004).

While these philosophers' arguments were typically focused on the distribution of wealth and resources in a society, criminology also experienced a similar argument in the 18th century. Cesare Beccaria (1764/1986) and Jeremy Bentham (1781/2000), two early criminological philosophers, argued for the importance of punishing a criminal proportional to the violation of the law that the criminal committed. These arguments are

often referenced in criminology classes as being relevant to the principles of deterrence, but they also represent the first attempts at establishing a distributive justice principle akin to the equity principle within the field of criminology.

Temporarily jumping ahead in the history of justice research, the needs principle has also been used in the field of criminal justice by scholars advocating for rehabilitative corrections. Andrews, Bonta, and Hoge (1990) put forth the risk-need-responsivity model for offender treatment that suggests the treatment received by the offender in the correctional system should be based in part on the needs principle. This places needs at a much lower status in the criminal justice system than the equity principle, which serves a foundational role in deciding the punishment an individual receives. Instead, needs becomes a guiding principle for what type of treatment an offender receives after sentencing. Still, there is an obvious connection to the distributive justice needs principle as the allocation of resources within the correctional system is based not on the crime an individual committed but on the needs of the individual.

These considerations of distributive justice, whether based on equity, equality, or needs, were exclusively concerned with identifying the "correct" distribution of outcomes. Beccaria (1764/1986) and Bentham (1781/2000) were not concerned with what punishment individuals perceived as fair, but with what punishment actually was fair. Andrews and colleagues' (1990) use of the needs principle is similarly concerned with identifying the correct allocation of resources within the criminal justice system. Later justice theorizing would shift its focus to examine individuals' perceptions of justice.

The Emergence of Science

The arguments of Adam Smith, Karl Marx, Cesare Beccaria, and Jeremy Bentham occurred early in the history of the field of sociology. At this point in the development of sociology, theories were typically written discursively with elaborate explanations for phenomena observed in society and little to no empirical support or prospective hypotheses (Lepenies, 1988; Markovsky, 2016). Lepenies (1988) suggests that, in its early days, the field of sociology existed somewhere between literature and science. In describing the state of classical sociological theorizing, Markovsky (2016; p. 3) notes that "only selective empirical validation is forgivable." However, as the field of sociology began to mature, it evolved into a social science.

Homans' (1961) study of human behavior represents this shift in thinking from the philosophical to the scientific for justice research. While Homans (1961) cites previous studies rather extensively throughout his work, including some research activity he and his colleagues conducted on distributive justice, his *Social Behavior: Its Elementary Forms* is the first work to begin stating theoretical propositions regarding the perception of justice in social groups. As Adams (1965, p. 292) would later comment, "the concept is not new [but]…In the hands of Homans … the concept of distributive justice has taken on the articulated character of what may be more properly called a theory." Homans' theoretical propositions led to hypotheses concerning when individuals would feel injustice and what their emotional responses to injustice would be based on the equity principle. In so doing, social psychology's focus shifted from philosophical to scientific thinking. Identifying the just distribution of outcomes is a philosophical exercise that attempts to identify some universal truth in establishing justice through

discussion and academic arguments. Identifying what people perceive as a just distribution of outcomes is a scientific endeavor that can be assessed through prospective theorizing and stringent empirical tests.

Following Homans' (1961) lead, social psychologists continued to develop and reformulate theories of distributive justice through the 1960s, 1970s, and 1980s (see Adams, 1965; Folger, 1986; Jasso, 1980; Markovsky, 1985). This research agenda continued to highlight and refine the importance of basing outcomes off the relative inputs of the individual as originally hypothesized by Homans (1961). Though Homans had focused on emotional reactions to injustice, Adams' (1965) work began to use perceptions of distributive justice as a predictor of other attitudes and behaviors. This contribution would prove fruitful for future researchers in describing the outcomes of perceptions of distributive justice (Folger & Konovsky, 1989; Markovsky, 1985; Skarlicki & Folger, 1997).

Following the popularity of distributive justice theory, Thibaut and colleagues (1974) proposed the idea that evaluations of process were important predictors of fairness. Thibaut and Walker (1975) then formalized this concept into their theory of procedural justice. Although the modern conceptualizations of distributive justice and procedural justice clearly distinguish procedural justice's role in evaluating process and not outcome (e.g. Tyler, 1990; Tankebe, 2013), Thibaut and Walker's original formulation did not have such a clear distinction. Rather, their theory focused on the idea that procedural fairness created distributive fairness. Thus, the primary goal of the study of process was still on creating fair outcomes. Furthermore, this early theory of procedural justice attempted to identify the most just procedure for different situations

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rather than examining the consequences of evaluations of procedural justice (Thibaut & Walker, 1975). This stands in contrast to later procedural justice theories that attempt to use perceptions of fairness as a predictor of other important normative concepts (Folger & Konovsky, 1989; Lind & Tyler, 1988; Tyler, 1990; Tyler & Blader, 2003).

Building on this early theory, Lind and Tyler (1988) attempted to shift the focus of procedural justice from outcomes to the process and the consequences of process evaluations. In so doing, they incorporated a concept put forth in earlier research "that a fair process also has value as an end in itself" (Tyler & Folger, 1980, p. 283). Additionally, Lind and Tyler (1988) address the distinctions between objective and subjective procedural justice. Objective procedural justice, similar to the philosophies of distributive justice, is concerned with the preferred or best process for a given situation. This was the subject of Thibaut and Walker's (1975) investigation into procedural justice in the courtroom. Subjective procedural justice, on the other hand, is concerned with the process' effect on individual assessments of fairness. This is the concern of the Lind and Tyler (1988) theory. Rather than merely determining which process is "best" Lind and Tyler concerned themselves with how people evaluate procedural fairness and how these evaluations impact other attitudes and behaviors. In this way, the Lind and Tyler theory is similar to the work of Adams (1965) who was interested in different evaluations of distributive justice and how those evaluations impact other attitudes and behaviors.

Thibaut and Walker's (1975) new concept of procedural justice generated a large amount of interest and increased research into the 1980s, especially among researchers exploring organizational behavior (e.g. Alexander & Ruderman, 1987; Folger, 1977; Folger, 1987; Greenberg & Folger, 1983). As research into this new concept was being

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undertaken, Bies and Shapiro (1987) noted the possibility that another concept was being included in assessments of procedural justice; interactional justice. Specifically, Bies and colleagues noticed in a series of studies that individuals assessed the manner in which a procedure was applied, in addition to the procedure itself (Bies, 1987; Bies, 2001; Bies & Moag, 1986; Bies & Shapiro, 1987). In their conception of the issue, procedural justice applied to the actual process itself, while interactional justice applied to the manner in which the authority figure applied that process. Thus, interactional justice was defined as "the quality of interpersonal treatment they receive during the enactment of organizational procedures" (Bies & Moag, 1986, p. 44). Other scholars did not believe this distinction to be important and argued that interactional justice was merely a term for the interpersonal component of procedural justice (Folger & Bies, 1989; Lind & Tyler, 1988; Tyler & Bies, 1990; Tyler & Lind, 1992). As such, later theories of procedural justice began to incorporate interpersonal treatment as a component of procedural justice (e.g. Tyler & Blader, 2000, 2003; Tyler & Huo, 2002).

Moving to Criminal Justice

While procedural justice and distributive justice were becoming increasingly important topics within the social psychology literature, research in criminology and criminal justice largely ignored these theories. Much of the criminological literature (including the beginning of this dissertation) recognizes Tyler's (1990) *Why People Obey the Law* as being the first attempt to bring these concepts into the realm of criminological research. However, it is worth noting that the original research on procedural justice evaluated perceptions of fair processes in courtroom proceedings (Lind & Tyler, 1988; Thibaut & Walker, 1975). Additionally, Tyler and Folger (1980) conducted research on

the impact of distributive and procedural justice on satisfaction with the police a decade before Tyler's seminal work was published. Still, the concepts of distributive and procedural justice were not widely used by criminal justice scholars until *Why People Obey the Law* in 1990. In fact, this dissertation's author could find only a single mention of the term procedural justice before 1990 in the flagship journal *Criminology* (Cavender, 1984). Furthermore, this mention only used procedural justice in reference to the philosophies of justice by Kant and Rawls (Cavender, 1984), rather than the scientific work by Thibaut and Walker or Tyler and Folger.

Throughout the 1990s, procedural justice received more attention from the field of criminology. Notably, the second earliest mention of procedural justice that this author could find in *Criminology* occurred when Agnew (1992) referenced procedural justice in his initial formulation of general strain theory. While Tyler argued extensively for the inclusion of procedural justice in the study of criminal justice authorities throughout the 1980s and 1990s (Casper, Tyler, & Fisher, 1988; Tyler, 1987; Tyler, 1988; Tyler, 1989; Tyler & Folger, 1980), a major test of the theory in criminal justice from researchers other than Tyler did not occur until 1997 (Paternoster et al., 1997). Paternoster and colleagues re-analyzed data from the Milwaukee Domestic Violence Experiment to demonstrate that the perceived fairness of the police had an impact on future assault rates.

As the field of criminology moved into the 21st century, research on procedural justice exploded. Evaluations of Tyler's "process-based model" of policing proved fruitful as scholars would connect perceptions of fairness in process to a number of favorable outcomes (e.g. Bradford, et al., 2009; Engel, 2005; Hough et al., 2010; Reisig et al., 2007). As the evidence continued to support the theoretical model formulated in

Why People Obey the Law (Tyler, 1990) and refined by Tyler and Huo (2002), procedural

justice would become an integral part of police reformers' agenda. In fact, procedural

justice became such an important topic that improving the community's trust in police

through procedural justice would form a pillar of the recommendations put forth in the

final report of the President's Task Force on 21st Century Policing (2015).

Throughout this wave of criminological research on procedural justice, the issue

of distributive justice remained largely ignored. Within the fields of social psychology

and organizational management, distributive justice remained an important consideration

in studies of perceptions of fairness and reactions to those perceptions (Clay-Warner,

Hegtvedt, & Roman, 2005; Griffith, Harvey, & Lusch, 2006; Hegtvedt & Killian, 1999;

Hsu, Anen, & Quartz, 2008; Lim, 2002; Martinez-Tur et al., 2006; Skarlicki & Folger,

1997), however, few scholars would examine perceptions of distributive fairness within

their research on the police, courts, or corrections (for notable exceptions see Engel,

2005; Tankebe, 2013; Wolfe et al., 2016). Recent criminological research has raised the

issue of distributive justice and urged scholars to reconsider the concept in their

examinations of perceptions of fairness (Sahin et al., 2017; Tankebe, 2013). However, the

limited research into distributive justice within criminology makes placement of the

concept within the existing theoretical model undetermined.

Distributive Justice – Social Psychological Theories

Distributive justice research in the field of social psychology has almost

exclusively focused on the equity principle. The early philosophical writings on the

subject by Aristotle suggested that the distribution of goods should be based on the

amount of work done by the individual. In writing the first scientific theory of

distributive justice, Homans (1961) adhered closely to this same principle. Specifically, Homans (1961, p. 75) proposed that, "a man in an exchange relation with another will expect that the rewards of each man be proportional to his costs… and that the net rewards, or profits, of each man be proportional to his investments." Thus, as an individual provides greater input (cost or investment), the individual should receive greater output (rewards or profits). Furthermore, Homans argued for a "rule of distributive justice" that established a comparison relationship for determining perceptions of fairness. Specifically, "if the investments of two men, or two groups, are equal, their profits should be equal" (Homans, 1961, p. 244). Adams (1965) would go on to mathematically formalize this statement as:

$$\frac{Person\ A's\ outcome}{Person\ A's\ inputs} = \frac{Person\ B's\ outcome}{Person\ B's\ inputs}$$

While this relationship seems simplistic, Homans (1961) noted that establishing justice within a group or exchange relationship would actually be quite complicated. While Homans believed the rule of distributive justice to be universal – that every individual would desire a relationship where the ratio of outcome to inputs was equivalent across individuals – he recognized that the means for assessing this ratio would not be universal. That is, individuals differ in their assessments of what should be considered valid inputs and valid outputs. If these concepts are not agreed upon it would be difficult, if not impossible to establish a situation where the ratios are equivalent for all parties involved.

Another major contribution of Homans' (1961) initial theory of distributive justice regarded the emotional reaction to conditions of injustice. Though the mathematical formula suggested by Homans (1961) and formalized by Adams (1965)

treated violations of the conditions of justice equally in each direction, Homans believed that the content of the emotional reaction to injustice would differ by direction. "The more to a man's disadvantage the rule of distributive justice fails of realization, the more likely he is to display the emotional behavior we call anger" (Homans, 1961, p. 75). Injustice that advantaged an individual, on the other hand, was more likely to cause guilt than anger. This proposition is especially important when discussing the concept of injustice within the framework of Agnew's (1992) general strain theory, which will be discussed in more detail later in this chapter.

Adams' (1965) work on distributive justice remained largely consistent with Homans' (1961) original propositions. In addition to providing the mathematical formula for comparing rewards and outputs, Adams would also suggest that conditions of injustice could lead to not only emotional reactions like anger, but to behavioral reactions as well. In particular, Adams argued that perceptions of injustice in the workplace could lead individuals to change their input behavior or even leave their job altogether. Markovsky (1985) would later term these and other behavioral reactions to perceived injustice (such as formal complaints) justice-restoration attempts. Markovsky (1985) viewed justice restoration attempts as behaviors that attempted to return a situation to the conditions of equity.

Jasso (1978) noted several flaws in Adams' (1965) mathematical formulation of the justice condition. In particular, Jasso noted that Adams' formula provided no easy measure of how much justice was being experienced. That is, solving the formula would tell whether or not the condition of justice was met and which individual had a larger

ratio than the other, but not how severely it was being violated. Jasso thus transformed

Adams' formula to:

$$Justice\ Evaluation = \frac{Person\ A's\ outcome}{Person\ A's\ inputs} - \frac{Person\ B's\ outcome}{Person\ B's\ inputs}$$

In this equation, when the justice evaluation is equal to 0, justice is achieved.

Jasso (1978) then argued that the experience of unfavorable injustice was more

impactful than the experience of favorable injustice. An accurate justice evaluation

function should highlight this fact and place greater injustice evaluations on unfavorable

experiences. Thus, Jasso settled on a justice evaluation function where the individual's

justice evaluation was the natural log of the ratio of actual outcome to the just outcome:

$$Justice\ Evaluation = \ln(\frac{actual\ outcome}{just\ outcome})$$

Under the conditions of this new formula, justice is achieved when the justice evaluation

is equal to zero. However, when the actual outcome is less than the just outcome the

justice evaluation should move away from zero more rapidly than when the actual

outcome is greater than the just outcome. This point is illustrated in Figure 2.1. When

actual outcomes are 50% greater than is just (actual outcome/just outcome=1.5), Jasso's

justice evaluation finds a value of .41. When actual outcomes are 50% less than is just

(actual outcome/just outcome=0.5), Jasso's justice evaluation finds a value of -.69. Thus,

unfavorable outcomes create more severe deviations from the just condition than

favorable outcomes.
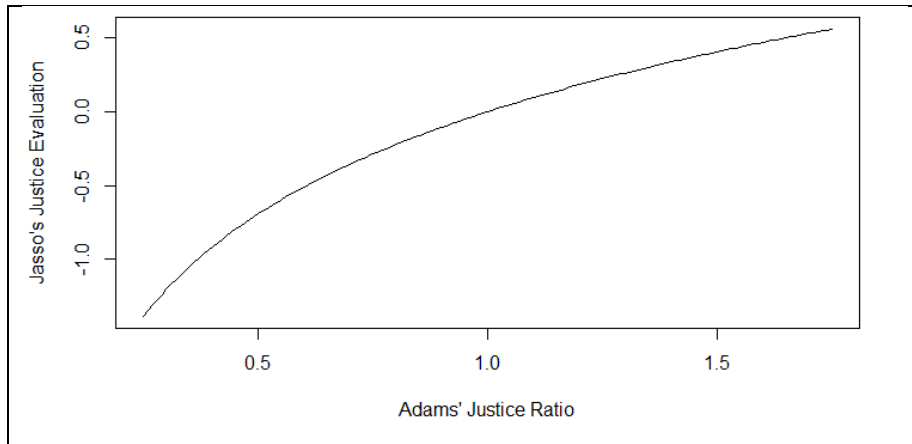
Figure 2.1. Justice Evaluation Function

Following Jasso's (1978) justice evaluation formula, Markovsky (1985) noted two

problems in using the justice evaluation function in research. First, there is no clear

method for determining the value of the just outcome. Markovsky (1985) solved this

problem by going back to Adams' (1965) original justice function:

$$\frac{Person\ A's\ outcome}{Person\ A's\ inputs} = \frac{Person\ B's\ outcome}{Person\ B's\ inputs}$$

Then, Markovsky simplified to create a referential rule:

$$Person\ A's\ outcome = \frac{Person\ B's\ outcome * Person\ A's\ inputs}{Person\ B's\ inputs}$$

Here, "Person A's outcome" becomes the just outcome the individual should receive.

Markovsky (1985) then noted that the base of Jasso's log function was arbitrarily

set to the exponential constant, *e*. Markovsky argued that the base of the log function

should be set to the amount of justice indifference that an individual had towards the

situation. If an individual had a higher degree of justice indifference, the line in Figure

2.1 would flatten and deviations from the just condition would not create a great sense of

injustice. If an individual had a lower degree of justice indifference, the line in Figure 2.1

would steepen and deviations from the just condition would be met with greater

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evaluations of injustice. Thus, Markovsky's (1985) variable base allowed individuals to evaluate justice differently depending on the level of investment he or she had in the present situation.

While mathematical discussions of evaluations of justice may seem unnecessarily complex, it is essential to understand the core contributions of these principles. First, evaluations of distributive justice are based on comparisons to other individuals or other groups. This is seen in Adams' (1965) formula, as well as Markovsky's (1985) formula for determining a just outcome. Second, unfavorable deviations from a just distribution create greater feelings of injustice, as seen in the use of the log function in both Jasso's (1978) and Markovsky's (1985) formulas. If an individual's justice evaluation is used to predict some future behavior, the difference between favorable and unfavorable situations of injustice need to be seen as a key measurement issue. Finally, the more indifferent an individual is to injustice, the less deviations from the just outcome will matter. This is demonstrated in Markovsky's (1985) variable base for the log function.

In applying the concepts of distributive justice to the field of criminal justice, all three of these contributions may prove crucial to understanding distributive justice's role in the larger justice framework. Criminal justice scholars have yet to consider how individuals form perceptions of distributive justice. Is a reference formula similar to those presented here used or is some other conceptualization for evaluating distributive justice needed? Researchers in criminal justice should probably expect Jasso (1978) and Markovsky's (1985) assertions that unfavorable conditions are met with a greater sense of injustice than favorable conditions to also apply to distributive justice in criminology. Indeed, criminologists have already considered this possibility in explorations of

procedural justice with mixed results (Bradford et al., 2009; Maguire, Lowrey, &

Johnson, 2017; Skogan, 2006, 2012). Finally, justice indifference may vary depending on

the role of the individual in the criminal justice context. Accounting for justice

indifference can enable a more complete and nuanced understanding of evaluations of

justice in criminal justice.

Multilevel Distributive Justice

In reviewing the state of distributive justice theories in social psychology,

Markovsky (1985) notes that these theories attempt to explain justice-restoring responses,

both emotional and behavioral, at the *individual* level (Adams, 1965; Folger, 1986; Jasso,

1978). Markovsky's (1985) own individual-level theory, tested workers' complaints

regarding pay as the justice-restoring response of interest. While these individual-level

assessments necessarily form the basis of our understanding of distributive justice, the

potential for distributive justice theories to explain aggregate-level factors like social

change has not gone unnoticed (Cook & Hegtvedt, 1983; Jasso, 1980, 1983; Markovsky,

1985).

Jasso (1980; 1983) first argued that the aggregate rate of justice-restoring

responses could be calculated from individual-level justice-restoring responses.

Markovsky (1985) then extrapolated this argument to make the assertion that individual-

level justice-restoring responses could be used to explain collective behavior that he

termed aggregate justice-restoring responses. Both Markovsky (1985) and Jasso's (1980;

1983) multilevel theories of distributive justice can easily be illustrated by the traditional

Coleman's (1990) boat of multilevel sociological theories (Figure 2.2). In multilevel

distributive justice theory, macro-level factors of distribution (e.g. social inequality, racial

discrimination, etc.) affect the assessment of fairness for the individual. This assessment then affects the likelihood of the individual engaging in a justice-restoring response. The individual justice-restoring responses create an aggregate rate of justice-restoring responses or organize into collective behavior forming an aggregate justice-restoring response.
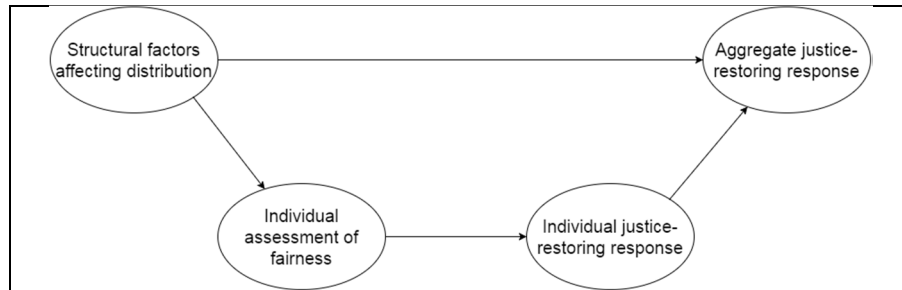
Figure 2.2. Coleman Boat

This multilevel approach to distributive justice may also prove fruitful in exploring phenomena in the criminal justice system. For example, the perceived unfair distribution of use-of-force by policing agencies since August of 2014 has led to the development of the Black Lives Matter movement (Edwards & Harris, 2016). This movement is consistent with Markovsky's (1985) description of an aggregate justice-restoring response. It is organized, collective behavior that is attempting to restore equity to the distribution of the use-of-force. As such, the framework of multilevel distributive justice theory may be helpful in exploring the causes and consequences of the Black Lives Matter movement or other collective action brought against the criminal justice system for perceived injustices.

A Note on Distributive Justice Measurement: Organizational Management Research

The social psychological theories of distributive justice discussed to this point have primarily focused on individuals' perceptions of justice based on a comparison of a

particular outcome to other outcomes. Thus, research on these theories typically focuses on distributing outcomes to subjects or fictitious third parties in a particular manner and assessing subjects' sense of injustice and their tendency to engage in justice-restoring responses (Folger, 1977; Jasso, 1978; Jasso & Rossi, 1977; Markovsky, 1985). Manipulation of the outcomes received by subjects or third-parties has the added advantage of allowing researchers to implement experimental designs which provide for stronger internal validity (Berk, 2005; Campbell & Stanley, 1963; Shadish, Cook, & Campbell, 2002). Testing the propositions of distributive justice theories using these experimental methods allows the researcher to state, with a considerable degree of certainty, that manipulating the objective conditions can alter overall perceptions of fairness or justice-restoring responses. These social psychological experiments are, therefore, well-suited for determining the validity of distributive justice theories. However, theories of justice and fairness have frequently linked assessments of justice to aspects of identity and relationships within organizations (Clay-Warner et al., 2005; Lind & Tyler, 1988; Skitka, 2003; Tyler & Blader, 2003; Wenzel, 2001). Laboratory experiments with hypothetical circumstances are unlikely to be able to effectively simulate concerns over group membership such as identity or relationships with other group members. Thus, these experiments are likely to have difficulty determining whether organizational relationships or identification with decision-makers impacts assessments of justice.

Contemporary research using distributive justice in fields such as organizational management has employed a different research design and measurement strategy (e.g. Clay-Warner et al., 2005; Lim, 2002; Skarlicki & Folger, 1997). These researchers have

used scales of perceptions of outcome fairness as a measurement of distributive justice. These scales ask individuals about the specifics of distributive justice within their workplace context using questions such as, "Where you work, the amount of pay employees receive is distributed fairly," or, "The overall rewards workers receive where you work are fairly distributed" (Clay-Warner et al., 2005, p. 95). Thus, the measure of distributive justice is specific to the individual and takes into consideration the difference in values and relationships that individuals may have. This makes it difficult to determine how changing the outcome distribution would impact individuals in a broader theoretical context, but makes it easier to understand how factors such as organizational commitment or social identity impact these assessments and their consequences. This advantage becomes especially important when combining distributive justice research with procedural justice theories that highlight the importance of social identity and organizational commitment.

Procedural Justice

After social psychology's early work focused on outcomes, Thibaut and colleagues (1974) and Thibaut and Walker (1975) began to shift the attention of justice researchers from outcomes to processes. Lind and Tyler (1988) would later praise Thibaut and Walker's (1975) shifting focus, calling it "a seminal event in the emergence of the social psychology of procedural justice. Although the study of process has a long history within social psychology, it was Thibaut and Walker who combined the study of process with an interest in the psychology of justice to initiate the study of procedural justice" (Lind & Tyler, 1988, p. 5).

In arguing for the importance of assessments of process, Thibaut and Walker (1975) noted that the use of fair procedures is the method most likely to lead to fair distributions. According to their theory then, the process is a means of achieving distributive justice. Additionally, this early theory contended that "the just procedure…is a procedure that entrusts much control over the process to the disputants themselves and relatively little control to the decision maker" (Thibaut & Walker, 1975, p. 1-2). Procedural justice is achieved when individuals have greater control and decision makers have little control. Scholars typically conceptualize control as influence (e.g. Tyler, Rasinski, & Spodick, 1985). So, greater control is seen where an individual has greater influence over the process and outcome. For example, being allowed to present evidence that is perceived to influence a judge's verdict would be seen as having a high degree of control. As such, Lind and Tyler (1988) refer to this conceptualization of procedural justice as the control version of procedural justice.

While Thibaut and Walker's (1975) emphasis on procedures was a watershed moment in the study of justice, their theory was not without its limitations. First, the study focused exclusively on legal proceedings and often measured which types of legal proceedings would be preferred. This limits the ability to generalize these findings to other contexts. Second, the emphasis of the study in finding the best process rather than on finding the consequences of fair or unfair processes limited its appeal to social psychologists and stood in contrast to the work being done in distributive justice (Adams, 1965; Folger & Konovsky, 1989; Jasso, 1980; Markovsky, 1985). Third, the use of control as the only predictor of procedural justice is uninformative in situations where one of the disputants is also the decision maker (e.g. police-citizen interactions, boss-

employee disputes). Using the conceptualization of influence, if one of the disputants is also the decision maker, it is difficult to determine which role (decision maker or disputant) is influencing the decision. Finally, in assessing procedural justice Thibaut and Walker relied primarily on responses to questions about which procedure was preferred and which procedure was viewed as fair, rather than on responses regarding which aspects of procedures were seen as fair. This limited the ability to draw a more complex definition of procedural justice beyond control.

Lind and Tyler (1988) attempted to generalize the theory of procedural justice beyond the specific legal contexts of Thibaut and Walker (1975). The result of their efforts was the group-value model of procedural justice, a social psychological theory of procedural justice that emphasized the link between the procedures groups used and the resulting values and membership implications from experiencing those procedures. Lind and Tyler (1988, p. 40) begin their discussion of procedural justice by pointing out that the work of Thibaut and Walker (1975) was "less bold than it should have been." Lind and Tyler (1988) follow the lead of Tyler and Folger (1980) in arguing that procedural justice is important, not just as a means to fair outcomes, but as an end itself. Furthermore, procedural justice should be seen as subjective. That is, individuals will evaluate the fairness of procedures differently across situations and that a single "best" procedure will not always be seen as fair by all parties involved.

Through a series of studies Lind and Tyler (1988) go from these fundamental arguments to several new considerations regarding procedural justice. Two considerations in particular would form the basis for the larger implications of criminal justice studies of procedural justice. First, "procedural justice judgments lead to enhanced

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satisfaction" (Lind & Tyler, 1988; p. 207), and second, "judgments of procedural justice enhance the evaluation of authorities and institutions" (Lind & Tyler, 1988; p. 209). A large portion of justice research in criminal justice has focused on satisfaction with the police and improved attitudes towards or evaluations of police (e.g. Bradford et al., 2009; Engel, 2005; Hough et al., 2010; Jackson & Sunshine, 2007; Reisig & Lloyd, 2009; Sunshine & Tyler, 2003; Wolfe, 2011; Wolfe et al., 2016; Wolfe, McLean, & Pratt, 2017).

Lind and Tyler's (1988) study also reached several other conclusions with broader implications for social psychological theories of procedural justice. First, Lind and Tyler recognized that giving voice was a key factor in procedural justice. This would later be used as a key component in attempts at defining procedural justice (Tyler, 1988; Tyler, 1990). Additionally, Lind and Tyler noted that procedural justice could result in changes to behaviors, not just attitudes and beliefs. This represents a similar shift as the work of Adams (1965) and would be used in both the organizational behavior literature and research into criminal justice (e.g. Lim, 2002; McLean & Wolfe, 2016; Paternoster et al., 1997; Reisig & Bain, 2016; Reisig & Lloyd, 2009). Lind and Tyler also concluded that procedural justice applied to more than just the procedures themselves but also how the procedures were applied thereby incorporating the developing literature on interactional justice (Bies, 2001; Bies & Moag, 1986; Bies & Shapiro, 1987). Finally, Lind and Tyler concluded that procedural justice could apply to a greater range of contextual situations beyond the courtroom previously studied by Thibaut and Walker (1975).

While these conclusions would shape Lind and Tyler's (1988) group value model of procedural justice and continued research on procedural justice in social psychology,

organizational management, and criminal justice, its most important contribution may be in the shift in the consideration of what constitutes a fair procedure. Thibaut and Walker (1975) had argued that control over the process was the sole predictor of procedural justice. However, Lind and Tyler's (1988) conclusion emphasized the need to consider more than issues of control in measuring assessments of procedural justice including the quality of interpersonal treatment. This left open the need for more refined measures of procedural justice in future research. Studies of procedural justice to that point had primarily measured procedural justice with one or two questions similar to "How fair were the procedures…" (e.g. Kanfer et al., 1987; Lind et al., 1980; Lind & Lissak, 1985; Tyler, 1984; Tyler & Caine, 1981). This measurement strategy is problematic for two reasons. First, relying on a limited number of questions greatly reduces the reliability of measurement (Carmines & Zeller, 1979). Second, similar to the concerns regarding Thibaut and Walker (1975), this measurement strategy is unhelpful in determining what characteristics of procedures are important in assessing procedural fairness.

Prior to Lind and Tyler's (1988) development of their procedural justice theory, Leventhal (1980) also noted a distinct lack of definition to the issue of procedural justice. Leventhal noted that research on procedural justice was relatively new, and as such, there was little information on what constituted procedural justice other than the somewhat tautological definition of the use of a fair procedure. Leventhal (1980) then discursively developed six rules for procedural justice: consistency, bias suppression, accuracy, correctability, representativeness, and ethicality. In Leventhal's view, fair procedures would produce consistent decisions (i.e., the same decision in the same circumstances), reduce the ability of the decision-makers' bias to affect decisions, be accurate, have some

ability to be corrected if inaccurate, be representative of group values, and adhere to personal ethics. While these rules were created without any empirical evidence, they do represent a step forward in procedural justice research as it formed the theoretical basis for deeper considerations of what constitutes a fair procedure. Lind and Tyler (1988) recognized this contribution, but criticized Leventhal's criteria as being too vague and too broad to operationalize.

Following up on Lind and Tyler's (1988) recognition that a more complex definition of procedural justice was needed, Tyler (1988) conducted interviews with over 500 citizens who had recent contact with either the police or courts. In these interviews, Tyler (1988, p. 128) found seven distinct components of procedural justice: "the authorities' motivation, honesty, and ethicality; the opportunities for representation; the quality of the decisions; the opportunities for error correction; and the authorities' bias." It is important to note that many of these concepts are consistent with the work of Leventhal (1980, e.g. ethicality and bias come directly from Leventhal's rules while quality of the decision contains similarities to Leventhal's accuracy rule), Thibaut and Walker (1975; opportunities for representation is similar to control over the process), as well as the findings of Lind and Tyler (1988; representation contains elements from Lind and Tyler's conclusions regarding voice and ethicality contains elements from quality of interpersonal treatment). Tyler (1990, p. 7) would later include these criteria in *Why People Obey the Law* as the characteristics of normative, procedurally-fair experiences.

In further refining the conceptualization of procedural justice, Tyler and Lind (1992) argued that procedural justice was made up of just three components: trust, standing, and neutrality. Trust referred to the motive-based trust of the authority, which

was characterized by the authority's perceived concern for the individual's needs and consideration of the individual's views. This reflects some of the same concepts as Tyler's (1988) earlier motivation and representation components. Standing referred to concepts that impact an individual's conception of his or her status in groups. This includes aspects like dignity, politeness, and respect for rights. Thus, it draws on the earlier concept of ethicality. Neutrality consists of honesty, fact-based decision-making, and the absence of bias. It draws from the earlier concepts of honesty, quality of decisions, and bias. This new conceptualization of procedural justice reduced the number of components that make up the concept but had considerable overlap with previous conceptualizations (e.g. Leventhal, 1980; Tyler, 1988).

Procedural justice would be refined even further by Tyler and Blader (2000) in a precursor to their group engagement model. In their conceptualization of the concept, procedural justice consisted of just two components: quality of decision-making procedures and quality of treatment. The previous concept of motive-based trust was moved to the quality of treatment component. Finally, Tyler and Huo (2002) refined the definition of procedural justice once more. In this conceptualization procedural justice was again composed of quality of treatment and quality of decision-making procedures, but motive-based trust was removed from both of these components. In Tyler and Huo's (2002) model, motive-based trust becomes another important concept considered separately from procedural justice that is also composed of the quality of treatment and the quality of the decision-making process.

Conflicting conceptualizations of procedural justice could have resulted in a body of research with conflicting results and no clear message on the impact of procedural

justice. However, despite the various conceptualizations of procedural justice, there is remarkable consistency in the elements that are considered components of procedural justice. All models include consideration of dignity, politeness, respect for rights, absence of bias, honesty, and voice in the decision-making process. This consistency in the underlying characteristics of a procedurally-just process has made it easier to generate a body of research on the topic with a consensus on the importance of fair procedures in group processes.

Interactional Justice – A Brief Note

In addition to distributive and procedural justice, researchers in social psychology and organizational management have also studied the importance of interactional justice. While early procedural justice focused on the impact of procedures on individuals' evaluations of justice, Bies and colleagues noted that individuals were also concerned with how these procedures were implemented (Bies, 2001; Bies & Moag, 1986; Bies & Shapiro, 1987). That is, individuals also considered the quality of treatment the individual received during the implementation of the procedure. This concern over the quality of treatment was termed interactional justice. Initially, interactional justice was considered to be an independent form of justice operating separately from procedural and distributive justice (Bies, 1987; Bies & Moag, 1986). However, conceptualizations of procedural justice have recognized the importance of interpersonal treatment. The definitions of procedural justice discussed in the previous section almost all included the quality of interpersonal treatment somewhere in their components of procedural justice (Tyler, 1988; Tyler & Lind, 1992; Tyler & Blader, 2000; Tyler & Huo, 2002). Bies (2001, p. 99) highlights the argument that "people can and do distinguish the fairness of formal

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procedures from the fairness of interpersonal treatment." This is not, however, inconsistent with the conceptualizations of Tyler and Blader (2000) or Tyler and Huo (2002) who consider quality of interpersonal treatment as distinct from the quality of decision-making procedures with both being components of procedural justice. Still, Bies (2001) argues that including interactional justice as a separate form of justice is better for parsimony and allows the two components (interpersonal treatment and decision-making procedures) to impact attitudes and behaviors differently.

To a certain degree, the discussion over interactional justice as a separate form of justice is a concern over a technicality. Both sides of the argument recognize that the quality of interpersonal treatment is an important consideration in individuals' evaluations of justice and fairness. Furthermore, both consider it to be, to some extent, separate and distinct from the quality of decision-making procedures. As a result, the best practice of researchers would be to include questions regarding both components and utilize statistical techniques such as exploratory factor analysis and confirmatory factor analysis to determine the degree to which the two components impact the attitudes and behaviors of interest to the present study. Whether it is its own distinct form of justice or a distinct component of procedural justice, interactional justice is clearly an important consideration that must be evaluated in examinations of justice frameworks (Bies, 2001; Lim, 2002; Skarlicki & Folger, 1997; Tyler & Blader, 2003)

Theories of Procedural Justice

In addition to differences in the conceptualization of procedural justice, the mechanisms by which evaluations of procedural justice impact attitudes and behavior are also not agreed upon by scholars. In particular, procedural justice theories typically link

procedural justice to key attitudes and behaviors using one of three mechanisms: social identity, legitimacy, or negative emotions. The roots of both social identity and legitimacy as mechanisms associating procedural justice to important outcomes lies in social psychological theories. The primary social psychological theories of interest to criminologists are the group value model (Lind & Tyler, 1988; Tyler, 1989), the group engagement model (Tyler & Blader, 2003), and the relational model of authority (Tyler & Lind, 1992), though other theories have connected perceptions of fairness to identity as well (Skitka, 2003; Wenzel, 2001). On the other hand, the link between procedural justice, negative emotions, and behavior lies primarily within criminology's general strain theory (Agnew, 1992).

The Group Value Model

In broadening the findings of Thibaut and Walker's (1975) early procedural justice theory, Lind and Tyler (1988) developed a new theory that relied on concerns about the quality of interpersonal treatment and status within the group rather than control over outcomes. According to this model of procedural justice, a sense of procedural justice would be strongest whenever the procedures enacted by the group were consistent with the shared values of the group. In other words, a group that values quick decision making by a strong leader would consider processes consistent with this value to be fairer than a due process procedure where procedural technicalities can influence outcomes. On the other hand, groups that value democracy and giving power to the common person would likely prefer procedures where authority was given to a group of common individuals (e.g. a jury) over a single authority. The demonstration of these shared values through procedural justice would create greater affect for group authorities

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and leaders. Lind and Tyler (1988) then make two key predictions for the importance of procedural justice. First, procedures will be more important than outcomes because procedures represent group values. Second, procedural justice will be most important to individuals with uncertain status in the group. When individuals experience fair procedures that conform to the groups values it will reaffirm their identity and status within the group. In the group value model, then, procedural justice is subject to the values of the group and is affected by the certainty of the individual's status within the group (Lind & Tyler, 1988; Tyler, 1989).

The Group Engagement Model

While identity and status were important considerations in the group-value model, its importance was limited to how identity and status influenced assessments of procedural justice (Lind & Tyler, 1988; Tyler, 1989). In contrast, the group engagement model contends that assessments of procedural justice will impact identity judgments which will in turn impact attitudes, values, and behaviors within the group (Tyler & Blader, 2003). Tyler and Blader (2003) use a four factor model of procedural justice similar to the two factor model they proposed earlier (Tyler & Blader, 2000), but with quality of treatment and quality of decision making processes split into two components each of formal and informal. These four components – informal quality of treatment, formal quality of treatment, informal quality of decision making, and formal quality of decision making – form procedural justice which impacts identity judgments. Identity judgments in turn shape psychological engagement in group norms which motivate individuals to engage in normative behavior (Tyler & Blader, 2003).

While group values and status were an important consideration in the earlier

group value model, the group engagement model placed increased emphasis on social identity. Social identity includes not only status within the group but also the pride and respect that comes from group membership (Tyler & Blader, 2003). Thus justice or injustice can increase or decrease the individual's pride in the group, as well as questioning their status in the group's membership. This decreased identification leads to less engagement in normative behaviors supported by the group. Studies testing the group engagement model have generally supported the importance of social identity in engagement in group norms, as well as its role as a mediator in the impact of procedural justice on these behaviors (Blader & Tyler, 2009; Fuller et al., 2009). Though research into procedural justice in criminology and criminal justice has tended to focus more on other theories – particularly the mediating mechanism of legitimacy – studies have shown identity judgments to be important in understanding the connection between procedural justice and normative attitudes and behaviors (Bradford, 2014; Bradford, Murphy, & Jackson, 2014; McLean, 2017; Murphy, 2013).

Legitimacy – The Relational Model of Authority

In their work redefining procedural justice, Lind and Tyler (1988) argued that procedural justice had the power to improve evaluations of authorities. While this concept is used in the group value model to demonstrate how procedures are seen as fair when they are consistent with the values of the group and its authorities, it takes on a bigger role in theories of procedural justice and legitimacy. In fact, it forms the foundation for the argument that procedural justice increases the perceived legitimacy of authorities. That is, legitimacy is considered one of the key evaluations of authority that can be improved through the use of fair procedures.

Legitimacy generally refers to the recognition that an authority has a valid claim to the power that it wields, though its specific definition and the components of legitimacy are widely debated (Beetham, 1991; Dornbush & Scott, 1975; Hegtvedt & Johnson, 2000; Zelditch, 2006; Zelditch et al., 1983). In one of the key works on legitimacy Beetham (1991, p. 3) states that "where power is acquired and exercised according to justifiable rules, and with evidence of consent, we call it rightful or legitimate." Thus, Beetham's (1991) definition contains two key elements, consent and the use of justifiable rules. Exercising power according to justifiable rules could also be seen as the use of fair procedures. Stated another way, a key component of Beetham's (1991) definition of legitimacy is the use of *fair procedures* in exercising power. Even outside of the realm of procedural justice theories then, the use of a fair procedure is critical to obtaining legitimacy as an authority figure. The similarities between justice frameworks and legitimacy were further reiterated by Hegtvedt and Johnson (2000) who argued for the inclusion of legitimacy considerations in social psychological justice research. One attempt at combining these two similar concepts can be seen in Tyler and Lind's (1992) relational model of authority.

The relational model of authority asserts that assessments of justice, both procedural and distributive, impact an individual's evaluation of the legitimacy of an authority (Tyler & Lind, 1992). The perceived legitimacy of the authority then impacts the individual's normative attitudes and behaviors, such as acceptance of the authority's decisions, compliance with the authority's rules, and satisfaction with the authority. While both procedural and distributive justice are considered in this model, Tyler and

Lind (1992) make it clear that procedural justice will have larger impacts on legitimacy than distributive justice.

This theoretical model actually arrived in the field of criminal justice prior to Tyler and Lind's (1992) relational model of authority or Hegtvedt and Johnson's (2000) call for the consolidation of justice and legitimation research. Tyler's (1990) procedural justice theory proposed in *Why People Obey the Law* is consistent with the relational model of authority. Tyler (1990) argues that individuals consider procedural justice and distributive justice concerns – with procedural justice being most important – in evaluating the legitimacy of criminal justice authorities. These evaluations of legitimacy then shape the individual's acceptance of criminal justice decisions, compliance with the law and the orders of criminal justice agencies, and willingness to cooperate with criminal justice authorities. The key difference between Tyler's (1990) criminal justice work and the relational model of authority (Tyler & Lind, 1992) lies in the conceptualization of procedural justice. While Tyler and Lind (1992) rely on the three component model of procedural justice discussed earlier (trust, standing, and neutrality), Tyler's (1990) conceptualization is more consistent with his earlier work (Tyler, 1988). The overlap in these theoretical models is considerable, however, as the conceptualizations of procedural justice of Tyler (1988) and Tyler and Lind (1992) are very similar and the intervening mechanism between procedural justice and the desired outcomes (legitimacy) remains the same.

Criminal justice researchers have primarily relied on the intervening link of legitimacy when conducting procedural justice research (Hough et al., 2010; Jackson et al., 2012; Murphy, 2005; Reisig & Lloyd, 2009; Reisig et al., 2012; Tankebe, 2013; Tyler

& Huo, 2002; Wolfe, 2011; Wolfe et al., 2016; Wolfe et al., 2017). This is due, in part, to the persuasive arguments of Tyler (1990) in pointing out that improving legitimacy has other benefits beyond compliance with authorities. Specifically, Tyler and Huo (2002) argue that in addition to increasing compliant behavior, legitimacy can help to improve trust and confidence in legal authorities. This has been especially appealing to policing scholars at a time when increased focus is being placed on community policing and the relationships between police and communities (President's Task Force on 21st Century Policing, 2015).

General Strain Theory – Negative Emotions

While theories utilizing the intervening mechanisms of social identity, group values, and legitimacy, have largely originated from social psychologists, the importance of negative emotions as an intervening mechanism originates with criminological theory. In particular, Agnew (1992) argues that experiencing injustice could lead to negative emotions, which without the proper coping mechanisms could lead to criminal behavior. Agnew's theory is primarily focused on identifying potential strains and mechanisms for coping with these strains. The causal link between experiences of strain and deviant behavior is negative emotions. However, not all negative emotions are created equal. Specifically, Agnew cites anger as the primary emotion that leads to deviant or criminal behavior. Agnew draws from research on justice to describe how experiencing injustice is one of the most prominent strains that can lead to anger. This argument echoes the sentiments of Homans' (1961) original distributive justice theory that emphasized the emotional impact of experiences of injustice, specifically identifying anger as a likely reaction to unfavorable conditions of injustice.

While a large amount of research has been conducted on general strain theory providing it a considerable amount of empirical support (e.g. Agnew et al., 2002; Broidy, 2001; Mazerolle & Piquero, 1997; Paternoster & Mazerolle, 1994), relatively little research has directly combined the propositions of justice theories with the propositions of general strain theory. The few tests that have combined these two theories have shown positive results (Barkworth & Murphy, 2015; Murphy, 2009a; Murphy & Tyler, 2008; Scheuerman, 2013). In addition to research in criminology, the mediating role of negative emotions has also been explored in other contexts. Specifically, researchers in organizational justice have noted key relationships between justice and emotions, as well as a relationship between negative emotions and negative behavioral consequences (Chebat & Slusarczyk, 2005; Fox, Spector, & Miles, 2001; Krehbiel & Cropanzano, 2000; Weiss, Suckow, & Cropanzano, 1999).

Conclusion

The concepts of procedural justice and distributive justice have extensive histories dating back several decades. Social psychologists, in particular, have developed detailed and comprehensive conceptualizations and theoretical models for both concepts. Several theories, including the group value model, the group engagement model, the relational model of authority, and general strain theory, provide implications for criminological research. The extent to which these concepts and theories have been tested in criminology is discussed in the next chapter.

CHAPTER 3

JUSTICE RESEARCH IN CRIMINOLOGY AND CRIMINAL JUSTICE

Justice research in the field of criminology and criminal justice has primarily focused on the role of procedural justice rather than distributive justice or interactional justice. This is underscored by the wealth of research that calls Tyler's (1990) social psychological theory of legitimacy the "process-based model" (Hough et al., 2010; Reisig & Bain, 2016; Reisig & Lloyd, 2009; Tyler & Huo, 2002; Wolfe, 2011; Wolfe & Piquero, 2011). That is not to suggest that issues of distributive justice have not been explored in criminal justice. Instead, these issues – such as racial disparities in sentencing, traffic stops, or police use-of-force – have been conducted outside of the theoretical framework established by researchers in social psychology. Still, justice processes have been important to the study of criminal justice.

Procedural Justice

Procedural justice research in criminology has typically used legitimacy as the theoretical link between procedural justice and outcomes of interest. While the role of social identity and negative emotions has been explored by criminologists examining procedural justice (e.g. Barkworth & Murphy, 2015; Bradford, 2014; Bradford et al., 2014), legitimacy stands as the most empirically supported causal mechanism between procedural justice and important outcomes due to its widespread use in criminological research. The large amount of research on legitimacy is, in part, a result of its importance within the policing context. While emotions and social identity may serve a causal link

between procedural justice and desired behaviors such as compliance or cooperation with the police (Barkworth & Murphy, 2015; Bradford, 2014), legitimacy has been argued to have an impact on other behaviors and key attitudes of interest to law enforcement agencies, such as trust and support for the police (Hough et al., 2010; Sunshine & Tyler, 2003; Tyler & Huo, 2002).

One of the most important behaviors linked to procedural justice is criminal offending. A few studies have examined the impact of procedural justice on offending without examining the previously mentioned intervening factors of legitimacy, negative emotions, or social identity (e.g. McLean & Wolfe, 2016; Paternoster et al., 1997). In a key study conducted in the first few years after the publication of *Why People Obey the Law*, Paternoster and colleagues (1997) linked improved perceptions of procedural justice to reduced instances of domestic violence. A larger body of research has linked improved perceptions of procedural justice to higher evaluations of legitimacy, which in turn, is associated with less criminal offending (Murphy, 2005; Reisig, Tankebe, & Meško, 2014; Reisig, Wolfe & Holtfreter, 2011). Overall, studies in criminology and criminal justice have continued to demonstrate support for Tyler's (1990) initial finding that perceptions of procedural justice are related to criminal offending (see also Murphy, Bradford, & Jackson, 2016; Tankebe, Reisig, & Wang, 2015; Tyler & Jackson, 2014).

Another critical outcome from improved perceptions of procedural justice and legitimacy is cooperation with the police. Tyler and Fagan (2008), in particular, argued that it is very difficult, if not impossible, for police to accomplish any of their goals regarding crime without the help of the community. This argument is further supported by social disorganization theory which places an emphasis on the role of the community

in helping to fight crime (Bursik, 1988; Sampson, 2012; Sampson & Groves, 1989; Sampson, Raudenbush, & Earls, 1997; Shaw & McKay, 1942/1969). Sampson and colleagues (1997, p. 919) highlighted the need for collective efficacy or "the willingness of local residents to intervene for the common good" to reduce crime in neighborhoods. Tyler's (1990) model of legitimacy argues that individuals will be more likely to intervene by calling the police for help or assisting the police in investigations when perceived legitimacy is higher (see also Tyler & Fagan, 2008). Research into the impact of procedural justice and legitimacy has strongly supported the connection between legitimacy and cooperation with the police (Hough et al., 2010; Metcalfe et al., 2016; Reisig et al., 2007; Reisig & Lloyd, 2009; Reisig et al., 2012; Tankebe, 2013; Tyler & Fagan, 2008). Furthermore, this finding has been remarkably consistent across a variety of settings with support coming from research conducted in Europe (Reisig et al., 2012), North America (Reisig & Lloyd, 2009; Reisig et al., 2007), and even the Middle East (Metcalfe et al., 2016).

Beyond the key behaviors of compliance with the law and cooperation with the police, procedural justice and legitimacy have also been associated with a variety of improved attitudes toward the criminal justice system. Tyler and Folger's (1980) initial study of procedural justice and policing revealed that procedural justice increased satisfaction with the outcome of interactions with police. This result has since been supported in a number of other studies regarding police satisfaction (Engel, 2005; Hinds & Murphy, 2007; Murphy, 2009b; Tyler & Wakslak, 2004). Procedural justice and legitimacy have also been shown to impact public trust, support, and confidence in the police (Bradford et al., 2009; Hough, Jackson, & Bradford, 2014; Jackson & Bradford,

2009; Jackson et al., 2012a, 2012b). Similar to the need for cooperation from the public, trust, support, and confidence in the police are critical for creating strong bonds between community members and the police that can help fight criminal behavior in communities. Eroding ties to the police in the form of decreased legitimacy may also increase the risk of criminal victimization (Wolfe & McLean, 2017). As a result of the positive benefits that can be seen from improving these attitudes towards the police, improving police-community relationships is a key focus of the President's Task Force on 21st Century Policing (2015).[1]

The vast majority of work done on procedural justice has investigated procedural justice and legitimacy in the context of policing. However, procedural justice has, to a lesser extent, been explored in other contexts of the criminal justice system. Early studies of procedural justice emphasized the importance of procedural justice within courtroom contexts (e.g. Thibaut & Walker, 1975; Lind & Tyler, 1988; Tyler, 1990). Indeed, Thibaut and Walker's (1975) initial study of procedural justice focused exclusively on courtroom interactions. A relatively newer development in procedural justice research has seen a focus on procedural justice in corrections (Beijersbergen et al., 2015; Beijersbergen, Dirkzwager, & Niewbeerta, 2016; Reisig & Meško, 2009). Generally, these studies of procedural justice and corrections support the argument that greater procedural justice can decrease problems behind bars as well as after release from a correctional institution.

In addition to being primarily focused on policing, research into procedural justice in criminal justice has been almost exclusively observational. That is, experimental

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[1] Agnew (1999) also highlights the importance of community-level indicators in understanding the importance of injustice and strain.

research on procedural justice and attitudes toward the police has only recently begun (e.g. Johnson, et al., 2017; Lowrey, Maguire, & Bennett, 2016; Maguire et al., 2017; Nix, et al., 2017). This is an important limitation of the existing research because it questions the validity of causal claims regarding procedural justice. The observational studies demonstrate that procedural justice and legitimacy are correlated with each other, as well as important attitudinal and behavioral outcomes, however, it does not establish the ability of criminal justice authorities to change evaluations of procedural justice and legitimacy.

To date, only three randomized controlled trials have attempted to link agency actions to perceptions of procedural justice: the Queensland Community Engagement Trial, the Scotland Community Engagement Trial, and the Adana Randomized Controlled Trial (MacQueen & Bradford, 2015; Mazerolle et al., 2012, 2013; Sahin et al., 2017). Results from these randomized controlled trials have been mixed. In the Queensland Community Engagement Trial officers conducting a randomized breath test to crack down on drunk driving would engage in "business as usual" in the control condition and employ a script that included key elements of procedural justice in the experimental condition (Mazerolle et al., 2012, 2013). The results demonstrated that the script improved procedural justice perceptions of both the specific police-citizen encounter during the experiment and police more generally. The Scotland Community Engagement Trial attempted to replicate the Queensland Community Engagement Trial in a different setting (MacQueen & Bradford, 2015). Results from this study, however, did not support the findings of the Queensland experiment with no impact on global perceptions of the police or legitimacy. Finally, the Adana Randomized Controlled Trial utilized a script

infused with key elements of procedural justice during traffic stops for excessive speeding (Sahin et al., 2017). The results of the Adana study showed that the use of the script improved citizen's perceptions of the specific encounter with police, but failed to improve global perceptions of police.

Caution should be exercised before generalizing the findings of these randomized trials. All three of these studies relied on the use of scripts to introduce procedural justice into experimental conditions and limited the application of this script to specific traffic stops. Procedural justice, as described by Tyler (1990), is likely to be more complex than a script is able to achieve. Engaging in procedurally-just policing necessitates that the officer be flexible in his or her interactions with citizens to provide them with the proper procedure for the specific circumstances of the encounter. For example, an individual stopped for speeding while running late to work may not want as lengthy of a procedure as an individual stopped for speeding while out on a Sunday afternoon drive, though both drivers will likely still want a fair procedure. Furthermore, the permanent use of a script in police-citizen interactions is not a viable long-term method of ensuring citizens have procedurally-just experiences.[2] As such, randomized experiments evaluating the impact of procedural justice training given to officers may be more effective in assessing the practicality of procedural justice as a method of improving perceptions of procedural justice and legitimacy. This approach would have the added benefit of allowing procedural justice to be infused into every interaction with a citizen rather than a specific subset of traffic stops.

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[2] For a more detailed discussion of the problems researchers encountered in implementing these field trials see MacQueen & Bradford, 2017.

As an alternative, controlled, laboratory experiments may be beneficial in assessing the ability of procedurally-just practices to shape individuals' assessments of police. Within a more controlled setting, researchers will have greater ability to shape the appropriateness of the procedural justice intervention being used. While the particular script an officer is using may be more or less appropriate depending on the setting of the traffic stop in the experiments mentioned previously, researchers can control all aspects of the interaction in a laboratory setting. Researchers have previously used video clips (e.g. Johnson et al., 2017; Lowrey et al., 2016; Maguire et al., 2017), as well as vignettes (e.g. Barkworth & Murphy, 2015; Nix et al., 2017) to achieve greater control. The video vignettes are typically filmed from the officer's point of view. Participants are then assessing vicarious procedural justice, rather than attempting to place themselves in the vignette and assessing direct procedural justice. Additionally, these analyses have yet to consider evaluations of distributive justice. These studies are new and confirming their findings under different conditions is important to increasing confidence in their findings.

Distributive Justice

While the focus of justice research in criminology has been procedural justice, a small number of studies have included distributive justice measures in their analyses (Engel, 2005; Reisig et al., 2007; Sunshine & Tyler, 2003; Tankebe, 2013; Tyler, 1990; Wolfe et al., 2016). Consistent with Tyler's (1990) initial hypothesis, these studies have shown that distributive justice has smaller effects on key outcomes (e.g. legitimacy, trust in the police) than procedural justice. Despite the smaller effect sizes, these studies have *still* shown that distributive justice is a significant predictor of these outcomes (Reisig et al., 2007; Sunshine & Tyler, 2003; Tankebe, 2013; Tyler, 1990; Wolfe et al., 2016).

Presently, discussions of distributive justice in theoretical arguments about criminal justice and legitimacy are often limited to cursory mentions without real substance. Furthermore despite its significance a growing number of studies exploring legitimacy and trust in the police using a justice framework have dropped distributive justice from their empirical models altogether (Hough et al., 2010; Jackson et al., 2012; Mazerolle et al., 2013; Murphy, 2005; Murphy & Tyler, 2008; Reisig et al., 2014; Sahin et al., 2017; Wolfe, 2011). Though some of these studies may be ignoring distributive justice out of practicality (e.g. re-analyzing previously collected data, attempting to shorten omnibus questionnaires, etc.), Reisig and Lloyd (2009, p. 45) note the importance of including distributive justice in stating, "at a minimum, however, distributive fairness should be included in systematic assessments of behavioral cooperation as a control variable."

Perhaps more concerning than the cursory mentions of distributive justice or its exclusion from empirical models is the confusion regarding what distributive justice actually means. Many discussions of distributive justice group it together with discussions of police effectiveness, sometimes even describing it as an instrumental concern (Hinds & Murphy, 2007; Metcalfe et al., 2016; Sunshine & Tyler, 2003; Wolfe, 2011). This confusion is undoubtedly the result of Tyler's reference to distributive justice as an instrumental concern in one of his key works on procedural justice, legitimacy, and policing (Sunshine & Tyler, 2003). Tyler's (1990) initial development of procedural justice in criminal justice, however, accurately depicted distributive justice as a normative concern. Instrumental concerns refer to concerns over the favorability of the outcome, or as Tyler (1990, p. 5) described it, "concern[ed] with winning." Distributive justice, as discussed in the social psychological theories of Homans (1961), Adams

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(1965), Jasso (1978), and Markovsky (1985), are not concerned with outcome favorability, but with outcome fairness. Jasso's (1978) justice evaluation specifically considers how distributive justice varies when outcomes are overly favorable as compared to overly unfavorable. An instrumental perspective, on the other hand, would posit that individuals would not be concerned with overly favorable outcomes because the individual would have won.[3]

Confusion over the concept of distributive justice has further complicated matters in the area of operationalization. In particular, criminal justice scholars have described distributive justice as being concerned with the distribution of police services (e.g. Reisig et al., 2007; Reisig & Lloyd, 2009). Although this could be a distributive justice concern, it is problematic to measure distributive justice as being relevant to the distribution of police services while measuring procedural justice related to police-citizen interactions. These questions represent two different decision points as well as two different aspects of a decision (procedural and distributive justice). By evaluating different decision points (distribution of services rather than distribution of outcomes of police-citizen interactions), researchers leave open the possibility that citizens are not more concerned about procedural justice than distributive justice but rather are more concerned about the decision regarding police-citizen interactions than the decision regarding the distribution of services. Ideally, the justice framework is used to evaluate aspects of the same decision or decision point. If procedural justice measures are concerned with whether or not police officers on the street engage in fair procedures, distributive justice measures should be concerned with whether or not police officers on the street distribute outcomes fairly. Put

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[3] For other discussions of the difference between the instrumental concerns of outcome favorability and the normative concerns of outcome fairness see Engel, 2005; Tyler, 2001.

another way, a better measure of distributive justice in most procedural justice studies would be to ask individuals about their perceptions of the fairness in the distribution of outcomes such as tickets, arrests, and searches, rather than fairness in the distribution of police services, such as frequency of patrols or increased effectiveness.

Despite the limited application and use of social psychological distributive justice theories in criminal justice, research into distributive justice has flourished in certain areas of criminal justice research. Specifically, research into racial bias in the criminal justice system is consistent with the concept of distributive justice though it is conducted outside of the theoretical frameworks of distributive justice. Claims of racial bias may be procedural or distributive in nature. For example, a procedural claim of racial bias would be one that asserts that the process of arrest, prosecution, or sentencing is biased against individuals of a particular race. Distributive claims of racial bias would assert that the distribution of outcomes across races in the criminal justice system is unfair.

Research into claims of racial bias typically focus on determining whether or not distributive injustice exists (Alpert, Dunham, & Smith, 2007; Knowles, Perisco, & Todd, 2001; Lundman, 2004; Lundman & Kaufman, 2003; McLean & Rojek, 2016; Ridgeway, 2006; Rojek, Rosenfeld, & Decker, 2012; Tomaskovic-Devey et al., 2006). In essence, these studies are attempting to determine the ratio inside the natural log function from Jasso's (1978) justice evaluation function. That is, they are attempting to determine the ratio of actual outcomes to just outcomes. The difficulty in conducting this type of research is in finding the just outcome that should be placed in the denominator (Fridell, 2004; McLean & Rojek, 2016; Walker, 2001). While these researchers have primarily been concerned with establishing whether or not objective distributive justice is being

achieved, there has been acknowledgment of the fact that feelings of injustice could be as important as the objective reality when considering police-community relations (Tyler & Wakslak, 2004). In this scenario, the denominator of just outcomes may be impossible to determine. As Homans (1961) noted in his initial work, individuals perceive inputs differently making a universal perception of distribution difficult to achieve.

Concerns over racial bias in policing have been exacerbated recently by incidents of unarmed African Americans being shot by police officers and an increase in negative publicity resulting from these incidents (Nix & Wolfe, 2015, 2016; Pyrooz et al., 2016; Rosenfeld, 2016; Wolfe & Nix, 2016). Similar to research into racial bias in other areas of criminal justice, research into this issue has concentrated on determining whether or not the use of force varies by race (Fryer, 2016; Nix et al., 2017). Establishing the presence of racial bias in the use of force is, of course, an extremely important task. However, for the purposes of police-community relations, assessing the causes and consequences of feelings of racial bias may be as important. If feelings of racial bias are directly linked to the actual presence of bias, the determination of racial bias and finding its solution is critical to improving police-community relations. If, however, feelings of racial bias are not linked to the presence of bias but some other predictor of feelings of injustice, then other tactics may need to be employed to improve police-community relations. In this manner, research into racial bias in policing may benefit from the introduction of social psychology's subjective theories of distributive justice.

Conclusion

There is a considerable body of research in criminology on the relationship between procedural justice, legitimacy, and a variety of outcomes. However, the

conceptualization, operationalization, and analysis of distributive justice has been

underdeveloped. To address this concern, the next chapter lays out an adapted version of

Tyler's (1990) theoretical model that refines the concept of distributive justice.

CHAPTER 4

REVISITING THE THEORETICAL MODEL

The wealth of research conducted in social psychology and criminal justice reveal that perceptions of justice clearly play an important role in understanding individuals' reactions to the criminal justice system. Even researchers that doubt the link between procedural justice and legitimacy acknowledge that procedural justice is important and is critical for policing (Nagin & Telep, 2017). As such, it is clear that procedural justice and its related concepts will continue to play a critical role in understanding police-community relations for years to come.

However, the current treatment of the concept of distributive justice in the field of criminal justice is troubling. Research has consistently shown distributive justice to be an important consideration in determining evaluations of legitimacy and trust in the police (Reisig et al., 2007; Sunshine & Tyler, 2003; Tankebe, 2013; Tyler, 1990; Wolfe et al., 2016). Yet, flawed conceptualizations and the exclusion of distributive justice are common in analyses of perceptions of justice in criminology. Improved specifications of distributive justice coupled with its inclusion in criminal justice research can create a more complete picture of the theory of justice frameworks. Furthermore, distributive justice theories can assist criminologists in their examinations of phenomena such as racial bias in policing.

To address this need, I propose an adapted model of procedural justice, distributive justice, and legitimacy incorporating guidance from the field of social

psychology. In constructing this model I develop a definition of distributive justice and propose new relationships with other theoretical concepts. However, I do wish to note that this model is not a refutation of Tyler or any other procedural justice scholars. Rather, it is a refinement that builds on the Tylerian model that reconsiders the importance of distributive justice.

Definition

I define distributive justice as the perceived fairness in outcomes delivered by the police. While assessing fairness in the distribution of police services is also an outcome judgment in line with distributive justice, it focuses on a different step in the decision-making process from most procedural justice research. As such, I do not include it here as a distributive justice consideration, though other studies may wish to do so if they are focused on that point in the decision making process.

Additionally, my conceptualization of distributive justice considers it to be a normative concept, consistent with Tyler's (1990) original theory. That is, distributive justice is not concerned with the favorability of outcomes or the threat of punishment. Rather, perceiving distributive fairness results in a normative bond that encourages individuals to have positive attitudes toward the police and to engage in compliant behaviors. That is not to say that instrumental concerns, especially outcome favorability (e.g. Brockner et al., 1997; Brockner & Wiesenfeld, 1996), may not play a role in forming perceptions of distributive justice. Rather the concept itself is normative and distinct from outcome favorability.

Theoretical Propositions

    Teachable Moments

The practical implications for theories of procedural justice and legitimacy are limited if officer behavior cannot impact an individuals' perceptions of fairness and legitimacy. In fact, Nagin and Telep (2017) have argued that procedurally just treatment at the hands of criminal justice authorities is desirable, not because it is linked to other evaluations, but because it is the right thing to do. From this perspective, procedural justice should be emphasized as the ethical thing to do, but plays no role in impacting individuals' attitudes towards criminal justice figures. This argument rests largely on the fact that most studies of procedural justice and legitimacy in the field of criminal justice have been observational and cross-sectional in nature. Thus, the link between legitimacy and procedural justice may be operating in the opposite direction of what is hypothesized. That is, individuals' perceptions of legitimacy may be influencing procedural justice perceptions, rather than the other way around.

Still, the results from randomized controlled trials of procedural justice provide considerable evidence that changes in officer behavior do influence individuals' perceptions in a given situation (Johnson et al., 2017; Lowrey et al., 2016; Maguire et al., 2017; Mazerolle et al., 2012, 2013; Sahin et al., 2017). This finding forms the basis of the first theoretical proposition of this dissertation:

    P_1: Perceptions of procedural justice will be higher when police officers behave in

        a manner consistent with the principles of procedural justice.

That is, officers who are polite, respectful, and listen to the citizen's side of the story will be viewed as procedurally just.

Fair Process Effect

The theories of distributive justice established by social psychologists rely on a subjective evaluation of distributive justice, but that evaluation is directly linked to the actual fairness of the outcome the individual received (Adams, 1965, Homans, 1961; Jasso, 1978, Markovsky, 1985). These theories also typically rely on an available reference to determine the fairness of outcomes. In the context of criminology and criminal justice, such references are likely difficult as contact with the police is relatively rare and individuals are likely to find out about contact with the police from other people like them, rather than individuals of different races and social classes. Information on others dissimilar to the individual would be needed to form an accurate reference. Given the difficulty in establishing a reference, distributive justice evaluations in criminal justice likely occur by processes other than the reference evaluations established by these theorists (Adams, 1965; Homans, 1961; Jasso, 1978; Markovsky, 1985).

In evaluating how individuals determine outcome fairness without an available reference, van den Bos and colleagues (1997) turned to the fair process effect. Their research revealed that individuals make assessments regarding the distributive fairness of their outcomes based on the fairness of procedures when references are unavailable. That is, procedural justice shapes perceptions of distributive justice in the absence of an available reference. Applying this finding to the field of criminal justice would suggest that individuals make assessments regarding distributive justice based on procedural justice. This argument forms the basis of the next theoretical proposition in this dissertation:

P₂: Higher perceptions of procedural justice will lead to higher perceptions of

distributive justice.

This proposition will be contrasted with a more traditional view of distributive justice. If

the fair process effect were not occurring, distributive justice would logically be related

to manipulations of the outcome the individual receives. That is, altering the outcome an

individual receives would be the primary method for manipulating distributive justice if

the fair process were not occurring in the field of criminal justice. As a result, the third

theoretical proposition is:

P₃: Outcome favorability will have a smaller impact on perceptions of distributive

justice than perceptions of procedural justice.

Tyler's Model

Adding in the fair process effect to our understanding of procedural justice and

legitimacy in criminal justice should not negate the wealth of literature on the subject that

has already been conducted. As such, the new theoretical model will also contain the

assertions made by Tyler (1990) in *Why People Obey the Law* and supported by the

decades of research reviewed in Chapter 3. Specifically, the theoretical model still

expects that procedural justice and distributive justice will impact individuals'

perceptions of the legitimacy of criminal justice authorities. However, the fair process

effect will be included in this analysis. Thus, procedural justice will positively impact

distributive justice, and both constructs will positively impact legitimacy. This results in a

condition of partial mediation that is specified in the fourth theoretical proposition:

P₄: Perceptions of distributive justice will partially mediate the relationship

between procedural justice and legitimacy.

Justice-Restoring Responses

Revisiting the role of distributive justice also provides an opportunity to utilize the work of social psychologists to expand criminologists' understandings of the impact of justice perceptions. The first promising area for expansion is the inclusion of the concept of justice-restoring responses (Markovsky, 1985). This concept refers to specific actions taken by an individual in an attempt to rectify situations of injustice. Markovsky (1985) argues that greater perceptions of injustice will make justice-restoring responses more likely. This forms the next theoretical proposition:

> P_5: Lower perceptions of procedural justice, distributive justice, and legitimacy
> will increase the likelihood of behavioral responses to officer-citizen interactions
> (e.g. justice-restoring responses).

Within the context of criminal justice, justice-restoring responses will be conceptualized as including behaviors like filing a complaint with the police department regarding an officer-citizen interaction. Thus, this theoretical model could assist in providing a framework for understanding complaints filed against police officers and departments.

Outcome Favorability

Finally, social psychologists have explored the possibility that outcome favorability also plays a role in relationships involving justice evaluations. Namely, research by Brockner and colleagues has found that the relationship between justice evaluations, such as procedural justice and distributive justice, and attitudinal and behavioral outcomes, such as legitimacy and justice-restoring responses, is stronger when outcome favorability is low (Brockner et al., 1997; Brockner & Wiesenfeld, 1996). In other words, individuals' perceptions of fairness will play a more important role in

predicting legitimacy and behavioral responses to officer-citizen interactions when outcome favorability is low. When outcome favorability is high, perceptions of justice will matter less. These findings inform the last set of theoretical propositions:

P₆: Outcome favorability will moderate the relationship between procedural justice, distributive justice, and legitimacy.

P₇: Outcome favorability will moderate the relationships between procedural justice, distributive justice, and behavioral responses to officer-citizen interactions.

The Full Theoretical Model

The combination of all of these theoretical propositions results in the theoretical model presented in Figure 4.1. The application of these propositions to officer-citizen interactions is largely consistent with the conditions under which their sources intended them to be used. However, this specific model should only be applied to interactions between police officers and citizens. Officer-citizen interactions represent a unique situation as the officer is likely to represent both an authority figure and an adversary. Furthermore, there is no clear method for dealing with errors in the decision-making process. Decisions by judges can be appealed and corrections personnel have supervisors that are often located within the correctional facility. However, improper conduct on the part of a police officer is likely harder to reconcile because the officers' superiors are not easily contacted and errors in decisions may not be corrected until after sufficient harm has been caused. Lastly, distributional information is at its most rare in officer-citizen interactions. Individuals may do research before appearing in court on possible outcomes and can talk to others in a correctional facility about the outcomes they receive. With

police officers, though, the contact is not expected, so research on the potential outcomes

will not have occurred. Some of these principles may apply to situations involving other

criminal justice officials, but the model would likely need to be adapted first.
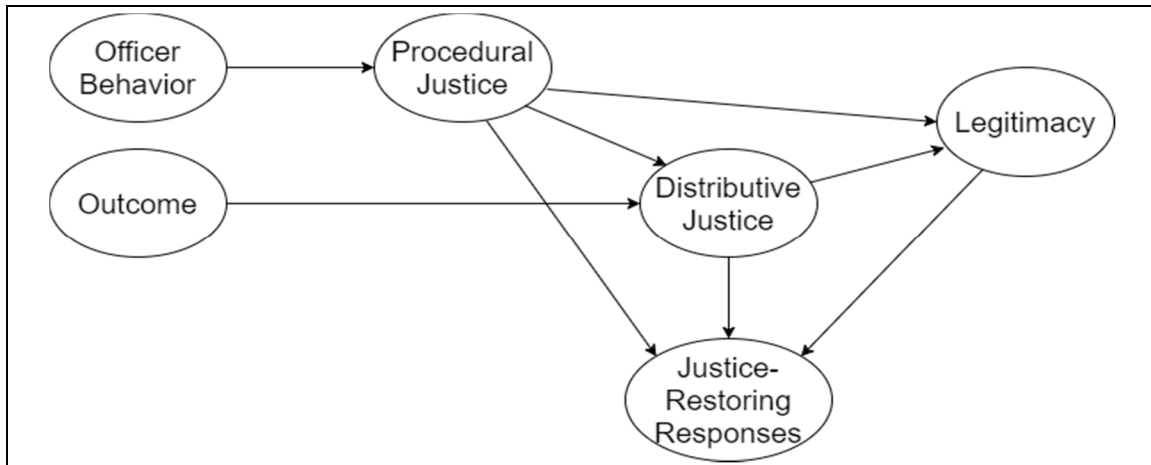
Figure 4.1. Theoretical Model

There is a clear consensus between the research of social psychologists (see e.g.

Clay-Warner et al., 2005; Skarlicki & Folger, 1997; van den Bos et al., 1997), the

research of criminologists including distributive justice in their analyses (e.g. Reisig et

al., 2007; Sunshine & Tyler, 2003; Tankebe, 2013; Tyler, 1990; Wolfe et al., 2016), and

the claims of activists concerned with racial bias in policing – distributive justice matters.

Refining Tyler's model to obtain a more thorough understanding of distributive justice,

as attempted here, could help create a more complete theory, as well as assist in

understanding and addressing the "Ferguson Effect." For example, incorporating

distributive justice as an intervening mechanism between procedural justice and

legitimacy supports the claims of Tyler's legitimacy theory, as well as the claims of

individuals that feel racially profiled. Procedural justice still exists as a predictor of

legitimacy; however, legitimacy is also impacted by feelings of distributive justice which

are influenced by perceptions of procedural justice.

Furthermore, misspecifying this relationship could result in underestimating the impact of both procedural justice and distributive justice on legitimacy. Including these concepts as co-variates in a regression model will cause the models to compete for explanation in their direct effects. However, treating them as a mediating relationship, if correct, will cause distributive justice to have a larger direct effect. Additionally, while the direct effect of procedural justice may decrease, the total effect (the direct effect plus the indirect effect) will likely be higher than the originally estimated direct effect.

Current Study

The present study will attempt to further criminological understanding of individuals' justice evaluations by testing the new theoretical model of individual perceptions of justice in police officer-citizen interactions. To do so, this study will utilize a 2x2 factorial design to assess the impact of variations in procedural justice and outcome favorability on perceptions of procedural justice, distributive justice, legitimacy, and hypothetical behavioral responses to these perceptions. The factorial design will be achieved by randomly assigning one of four vignettes to participants completing a survey on perceptions of police officer-citizen interactions. Varying conditions of procedural justice will allow for the examination of how police officer behavior impacts individual perceptions of procedural fairness, as opposed to respondents' pre-existing attitudes regarding the police. Additionally, variations in outcome favorability will help address whether outcome favorability or procedural justice is more influential in determining perceptions of distributive justice. Furthermore, manipulating outcome favorability allows for the evaluation of a potential interaction between outcome favorability and perceptions of justice when predicting reactions to justice evaluations.

The theoretical propositions developed throughout this chapter have been operationalized using this methodology to create the following hypotheses corresponding to each proposition:

H_1: Respondents' perceptions of procedural justice will be higher in the procedural justice condition than the procedural injustice condition.

H_2: More positive perceptions of procedural fairness will be associated with more positive perceptions of outcome fairness.

H_3: Unfavorable outcomes will be associated with more negative perceptions of distributive justice, but outcome favorability will have a smaller impact on perceptions of distributive justice than perceptions of procedural fairness (H_2).

H_4: Perceptions of distributive justice will partially mediate the relationship between procedural justice and legitimacy.

H_5: Negative perceptions of procedural justice, distributive justice, and legitimacy will make behavioral responses to officer-citizen interactions (e.g. justice-restoring responses) more likely.

H_6: Outcome favorability will moderate the relationships between procedural justice, distributive justice, and legitimacy such that perceptions of justice are more important when outcome favorability is low.

H_7: Outcome favorability will moderate the relationships between procedural justice, distributive justice, and behavioral responses to officer-citizen interactions such that perceptions of justice are more important when outcome favorability is low.

CHAPTER 5

METHODS

Data and Procedure

Data for the present study comes from a national convenience sample of 2,084

adults in the United States. The sample was obtained by Qualtrics Labs, Inc and had

quotas established for the sample to be nationally representative on age, race/ethnicity,

and gender. No response rate for the survey was available due to the variety of

methodologies used to recruit participants.[4] However, when recruiting for the study no

information was provided regarding the content of the study. Additionally, the sample

had a completion rate of 68.7%. This means that 68.7% of people entering the survey

provided data that was retained for the final sample. Individuals could have been

excluded if their inclusion violated a quota (n=782) or if they provided invalid data

(n=167).[5] This data shows that individuals did not drop out once they found out about the

content of the survey or once they experienced the vignette manipulations (discussed

later). Research on response rates demonstrates that response rates are problematic when

there is reason to believe that response is linked to variables of interest in the study

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[4] Qualtrics Labs, Inc. recruits participants through emails and banner ads. Due to its use of panel partners and advertisement recruiting it is impossible to know how many people saw the link to complete the survey. However, this is not uncommon for this type of study. The methodology is easily comparable to laboratory-style experiments conducted in psychology departments where participants are recruited through a departmental website used by undergraduate students.

[5] Invalid data includes violating Qualtrics quality checks for answering questions too quickly, not agreeing to provide best answers, or indicating that the individual was less than 18 (a violation of IRB and Qualtrics policies).

(Pickett, 2017). The characteristics of this sampling procedure – specifically, the lack of information on the content of the study prior to entering the Qualtrics website and the lack of individuals dropping out of the study after the content was revealed – make it unlikely that willingness to respond was linked to any variables included in the study.

Still, convenience samples are argued to have limited generalizability (Bachman & Schutt, 2014; Peterson & Merunka, 2014). This sample, in particular, is limited to individuals who have internet and were willing to participate in online surveys in exchange for remuneration in the form of cash and gift cards. So, there is some question as to whether the results apply to individuals who do not meet these criteria. Despite these concerns there is significant reason to appreciate the value of a convenience sample for this study.

First, this study takes place entirely in the realm of theory testing; it tests a theoretical framework to determine if the tenets of the theory are supported. When considering theory testing, Lucas (2003) argues that generalizability should more appropriately be considered a characteristic of a theory, rather than a study. Unless a truly random sample of the entire world's population is achieved, the findings of any study are limited to the context under which the study was conducted and any generalization beyond this context is conjecture regardless of the sample method. A theory, however, can be supported by a variety of studies in a variety of contexts. Thus, a theory is generalizable to the extent that it is supported by a number of studies conducted in different contexts, regardless of the generalizability of the individual studies. Scholars should strive more for generalizable theory rather than a generalizable study. A convenience sample then, could serve as an important first context to examine the theory.

Second, generalizability, or external validity, can only be assessed in studies with adequate internal validity. "Internal validity is the basic minimum without which any experiment is uninterpretable" (Campbell & Stanley, 1963, p.5). In other words, there is little point to generalizing findings, if those findings are not even valid within the study context (Weisburd, 2010). This study employs the random assignment of vignettes to manipulate conditions under which procedural justice, distributive justice, and legitimacy are evaluated. Random assignment provides for strong internal validity. Sacrifices in external validity that are made when using a convenience sample are, therefore, overcome by the added internal validity achieved through random assignment.

Design

Participants were asked for their demographic information, whether they had any previous contact with police, and for their global perceptions of procedural justice and distributive justice. After completing this portion of the survey, participants were then asked to read a randomly assigned vignette. In each vignette, the individual is running late for work. In an attempt to arrive at work on time, the individual exceeds the speed limit. While speeding, the individual is pulled over by a police officer.

The vignettes then varied across conditions of high or low procedural justice, and favorable or unfavorable outcomes. High procedural justice was achieved by having the officer in the scenario speak politely, give voice to the citizen, and give reasons for pulling the individual over related to public safety. Low procedural justice was achieved by having the officer use profanity, not give voice, and give reasons for pulling the citizen over related to personal biases rather than the law. A favorable outcome was presented by having the officer let the individual off with a warning. An unfavorable

outcome was presented by having the officer write the individual a ticket (see Appendix A for each vignette). Accordingly, this study used a 2x2 design with the following possible randomized vignettes: *high* procedural justice and *favorable* outcome; *high* procedural justice and *unfavorable* outcome; *low* procedural justice and *favorable* outcome; *low* procedural justice and *unfavorable* outcome. These vignettes were randomly assigned using Qualtrics' random presentation function.

After reading the vignette, individuals were then asked about their perceptions of procedural justice and distributive justice regarding the specific scenario they read, and their likelihood of engaging in a justice-restoring response following the interaction with the police officer. Following these questions, participants were then asked a series of questions regarding their evaluations of police legitimacy.

Pilot Study

The vignettes and measures to be utilized in this study were piloted on 128 students at the University of South Carolina in September 2016. Participants in the pilot study were recruited from two classes in the Department of Criminal Justice. Participation in the study was voluntary, anonymous, and no compensation was given by the survey administrator for participation in the study. The survey was administered to everyone in attendance at both classes and participants were given time in class to complete the survey. Two sections of the same course were chosen for administration so as not to sample the same students twice. Additionally, vignettes were randomly assigned using R's uniform distribution random number generator. R's random number generator was limited to randomly generating a 1, 2, 3, or 4 corresponding to one of each of the possible vignettes. After a list of 200 numbers was generated, vignettes were placed in

the order corresponding to the list. In class, students were then handed a survey and vignette packet in order, effectively achieving random assignment. In total, responses were received from 128 of the 147 students enrolled in the two courses for a response rate of 87.1%. This response rate, however, does not account for any non-responses due to absences because attendance was not taken in either class. Analyses of the pilot data are presented in Appendix B. These analyses provided guidance for how concepts were measured in the larger data collection and present the validity of both the measures and the manipulations used to create the factorial design.

General Analytic Strategy

The analyses conducted in this study will fall under the umbrella of latent variable analysis. That is, analyses will be conducted using confirmatory factor analysis and structural equation modeling. As discussed in the pilot study analysis (see Appendix B), these methods rely on the variance-covariance matrix to create latent variables that minimize the impact of measurement error (Kline, 2016). Throughout the analyses, the primary estimation method will be the robust maximum-likelihood (MLR) estimator provided by R's *lavaan* package. The maximum-likelihood estimator is the most common and widely accepted estimator used in latent variable analyses and the robust estimator attempts to account for small amounts of non-normality in the data (Finney & DiStefano, 2013). While the measures to be utilized in this study did not provide any indications of univariate non-normality, the robust estimator is still appropriate given the potential for multivariate non-normality. If multivariate non-normality is present, the estimator will be able to adjust for it. If there is normality in the data, the estimator will reduce down to

provide the same estimates that would be seen using the traditional maximum likelihood estimator.

To assess the fit for all of the models, four global fit indices will be utilized: the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), the standardized root mean residual (SRMR), and the root mean squared error of approximation (RMSEA). Hu and Bentler (1999) note that using a single-index to assess model fit is problematic because indices are able to detect different aspects of model misfit (e.g., structural fit compared to measurement fit). As such, it is recommended that scholars use the SRMR – due to its unique advantages for detecting fit – and at least one other fit index. SRMR values below .08 are generally recognized to represent good fit (Hu & Bentler, 1999). RMSEA values above .10 indicate poor fit (Browne & Cudeck, 1993). Finally, TLI and CFI values above 0.95 indicate good fit (Hu & Bentler, 1998; 1999). The chi-square test of exact fit was not utilized in this study because it is highly susceptible to inflation in large sample sizes. Thus, when sample sizes are large enough for structural equation models it becomes extremely difficult to achieve a sufficient chi-square value (Kline, 2016). Where model fit on the four indices suggested changes were needed, modification indices were examined to suggest the best changes.

The analysis proceeds in two stages. First, the measures for each construct are presented. This analysis contains details regarding the measures, as well as tests for satisfactory fit in the measurement model. Once the measures have been constructed, the analytic strategy for the tests of the theoretical propositions are presented.

Measures

The measures section of this dissertation is split into three sections: vignette manipulations, theoretical variables, and control variables. While all measures were tested in the pilot study (see Appendix B), changes to most of the measures were made between the pilot and the larger data collection. However, these changes were consistent with the recommendations from the pilot study and were necessitated by the practicalities of funding and survey length for the large data collection. Given that the measures were guided by the results of the pilot study, exploratory factor analysis is not used on any of the measures presented below. Rather, confirmatory factor analysis, was utilized to test the measurement strategy. All variables were measured on a five-point scale, unless otherwise indicated.

Manipulations

The first set of variables contains the manipulations to the vignette. As stated previously, the vignette was manipulated by having the officer behave in a procedurally fair or procedurally unfair manner and by having the subject receive a ticket or a warning (see *Design* for a description or Appendix A for the full vignettes). Each of these manipulations are treated as separate variables. *Officer behavior* is a binary variable with 1 indicating that the officer behaved in a procedurally fair manner and 0 indicating the officer behaved in a procedurally unfair manner. *Outcome* is also a binary variable where 1 indicates that the subject received a ticket and 0 indicates that the subject received a warning.

Theoretical Variables

The next set of theoretical variables contains measures of the concepts contained in the hypotheses of the study. A full list of all of the items contained within this section can be found in Appendix C. *Situation specific procedural justice* consisted of seven items presented immediately following the vignette that assessed individuals' perceptions of the quality of treatment (e.g., "The police officer in the scenario treated me with respect") and the quality of the decision-making process (e.g., "The police officer in this scenario gave me a chance to tell my side of the story before they decided what to do"). Thus, both of Tyler & Huo's (2002) components of procedural justice were represented in the measure. The initial single-factor model suggested by the pilot study had a slight problem with fit (RMSEA=0.11). Modification indices indicated that the error variances for two items ("The police officer in the scenario: explained their decisions and actions in a way that I understood" and "…made their decisions based on facts, rather than their own personal opinions") were correlated.

Correlating error variances is slightly problematic because it violates some of the assumptions of Classical Test Theory, but it is necessary in some cases. In those situations, it is important to consider the source of the error and not correlate errors merely to improve model fit (Gerbing & Anderson, 1984). In this case, the source of the error appears to be the similarities in the two items. It is logical to assume that believing the officer made her decision based on facts could result from the officer explaining her decisions and actions – the content of these two items. Thus, the correlated variance seems to be a result of indicator specific commonalities, which is not problematic for the measurement model. Additionally, specifying this correlated error variance did not

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violate the rules for nonstandard confirmatory factor analysis models with correlated errors developed by Kline (2016). Thus, the model was re-estimated with the error correlation specified. With this change, the model achieved excellent fit (TLI=0.99, CFI=0.99, RMSEA=0.07, SRMR=0.01).

Situation specific distributive justice was assessed by three items also presented immediately following the vignette. These items asked individuals to assess the fairness of the outcome they received in the scenario (e.g., "The police officer in this scenario delivered a fair outcome"). Standard rules for confirmatory factor analysis require three indicators for a single factor model, as is the case here. While meeting this rule will allow the model to be estimated, fit measures cannot be inspected as the model is just-identified (df=0). Thus, the specific distributive justice model was combined with the already tested procedural justice model to generate a correlated factor model with higher degrees of freedom. Given that the specific procedural justice model had already been tested, poor fit in the correlated factor model would have to be caused by the fit of the specific distributive justice factor. Fortunately, the correlated factor model had good fit (TLI=0.97, CFI=0.97, RMSEA=0.09, SRMR=0.04).

Legitimacy was measured using six items presented after the vignette that assessed respondents' evaluations of the police (e.g., "You should support the decisions of police officers even when you disagree with them"). A single-factor model, as suggested by the pilot study, did not fit the data (TLI=0.70, CFI=0.82, RMSEA=0.27, SRMR=0.10). The factor loadings estimated by the model clustered items into two groups, one with standardized loadings around 0.55, and one with standardized loadings around 0.87. A content inspection of these items revealed that one cluster focused on

concepts described in other studies as obligation to obey (e.g., "You should do what the police tell you even if you do not understand or agree with the reasons") and trust in the police ("The police in my community care about the people in my community"; see Hamm, Trinkner, & Carr, 2017). This suggested that there may be two correlated factors present in the data. A model specifying this relationship was estimated and achieved good fit (TLI=0.96, CFI=0.98, RMSEA=0.10, SRMR=0.05).

Justice-restoring responses was measured using seven items assessing an individual's willingness to file a complaint about the police officer in the scenario through a variety of venues (e.g., "If the events in the scenario happened to you, how likely would you be to file a complaint with the police department regarding the officer's behavior?"). This measure also did not achieve acceptable fit in the suggested single-factor model (TLI=0.81, CFI=0.88, RMSEA=0.16, SRMR=0.05).

Modification indices indicated that several of the items had correlated error variances. Rather than attempt to specify each of these correlations, which may have led to a violation of Kline's (2016) rules for such models, the correlations were examined for possible commonalities in the items. This revealed that the items were forming two clusters; one regarding complaints about the officer's behavior – procedural justice-restoring responses (see above example for this measure) and one regarding complaints about the outcome – distributive justice-restoring responses (e.g. "If the events in the scenario happened to you, how likely would you be to file a complaint with the police department regarding the outcome you received?"). One item did not clearly fit into either of these categories and was, therefore, removed from the measure. A re-estimation of the model as a correlated factor model based on these groups had significantly

improved the model fit, but still not to acceptable levels. Modification indices were re-examined and suggested that two items using the same method of complaint ("…complain about the officer's behavior to your friends or family?" and "…complain about the outcome you received to your friends or family?") had correlated error variances. As with the specific procedural justice measure, specifying this correlated error did not violate Kline's (2016) rules and was justified given the similarities in the question. Specifying this correlated error also allowed the model to achieve acceptable fit (TLI=0.97, CFI=0.99, RMSEA=0.11, SRMR=0.01).[6]

Control Variables

All control variables were assessed prior to the participant reading the vignette. Measures in this category include global attitudes towards the police, whether the individual had previously been *stopped by the police* for a traffic violation (dummy coded, 1=previously stopped), the participant's *age*, the participant's *gender* (dummy coded, 1=female), and the participant's race/ethnicity. The latter variable was measured by a series of dummy variables where the participant identified as *Black*/African American, *Hispanic*/Latino, or any *other* race category. Participants identifying as White/Caucasian served as the reference category for these dummy variables.

Global attitudes toward the police were assessed by two measures. The first, was the participant's *global procedural justice* evaluations. This was assessed by an adaptation of the seven items used in the specific procedural justice measure worded to be broader in nature (e.g., "The police treat citizens with respect"). As with the specific

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[6] Note that RMSEA is still not below the originally stated cutoff (RMSEA<0.11), however, it approached this cutoff and all other measures indicated excellent fit. Given the steps taken to improve fit already, this model was deemed acceptable.

procedural justice measure, the initial single-factor model did not achieve acceptable fit (TLI=0.94, CFI=0.96, RMSEA=0.13, SRMR=0.03). Modification indices suggested that this was the result of correlated errors between the first two procedural justice items. These items contained similar content by asking participants about their evaluations of the quality of interpersonal treatment by police. Thus, correlating the errors was once again justified. A re-specified model with correlated errors was estimated and achieved acceptable fit (TLI=0.98, CFI=0.99, RMSEA=0.07, SRMR=0.07).

The second measure of global attitudes towards the police was a measure of participants' *global distributive justice* evaluations. This measure contained five items that asked individuals for their perceptions of fairness in the distribution of outcomes by the police (e.g. "How often do the police deliver fair outcomes to the citizens they interact with?"). It should be noted that the pilot analysis (see Appendix B) suggested that this model might need some alterations. As predicted, a single-factor model had very poor fit (TLI=0.24, CFI=0.62, RMSEA=0.43, SRMR=0.18). As with the pilot, two items that asked about the fairness of outcomes generally (see example already provided) and three items asking about the fairness of outcomes by group (e.g. "How often do the police deliver different outcomes to individuals because of their race?") appeared to group into separate factors. Two different methods effect models where these groupings were caused by similarities in question wordings were evaluated, but did not achieve acceptable local fit – that is, individual items did not load on factors as hypothesized – and were rejected.

Models examining a second-order structure and a correlated factor structure, as hypothesized in the pilot study, were also examined and achieved poor local fit. Despite several attempted modifications to the measurement structure, satisfactory fit could not

be achieved by any models including all five items. Given their consistency with the later measure of specific distributive justice, two items measuring global distributive justice broadly (as opposed to the group-based items) were assessed for their ability to form a satisfactory measurement model. As mentioned above, confirmatory factor analysis requires at least three items to be fully identified, so the confirmatory factor analysis was run as a correlated factor model with the global procedural justice factor and the two global distributive justice items. This model achieved acceptable fit and was retained (TLI=0.99, CFI=0.99, RMSEA=0.05, SRMR=0.02).

Final Measurement Model

As a final assessment of the measurements conducted in this dissertation a full confirmatory factor analysis of all items was constructed. This model included each of the latent constructs that have been discussed and included them in a correlated factor model with no structural regressions. The model achieved acceptable fit (TLI=0.96, CFI=0.96, RMSEA=0.05, SRMR=0.06), indicating that the measures constructed here fit the data well enough to allow for a structural equation model to be estimated.

Structural Analytic Strategy

With the measurement model constructed, MIMIC models were run to test for differences in latent means on global procedural justice, global distributive justice, specific procedural justice, and specific distributive justice. MIMIC models regress latent variables – constructed using CFA – on observed indicators, in this case the vignette conditions. This allows for the assessment of differences in latent means across these vignette conditions. MIMIC models assume strict measurement invariance, which is to say that it assumes the latent variable (in this case, procedural justice and distributive

justice) is evaluated exactly the same across the groups identified by the observed variables (Thompson & Green, 2013; Kline, 2016). For this reason, MIMIC is limited in its utility to compare latent means across groups such as race or gender where measurement may vary for the same reason the mean varies. However, the present study uses random assignment to vary vignette conditions. As a result, there is little reason to suspect that measurement would vary by randomly assigned condition. Thus, MIMIC is the best option for assessing simple latent mean differences by condition.

In assessing differences in the latent means by vignette conditions, preliminary support can be provided for a number of hypotheses and assumptions. First, the MIMIC models for global procedural justice and global distributive justice provide a test of the assumption of pre-test balance. That is, random assignment should have created groups with equivalent views of the police prior to the introduction of the vignette. If this is true, the MIMIC models for global procedural justice and global distributive justice would be expected to show no significant effects across vignette conditions. Second, the MIMIC models for specific procedural justice and specific distributive justice provide a preliminary test of the fair process effect specified in Hypotheses 2 and 3, as well as the relationship between officer behavior and perceptions specified in Hypothesis 1.

Structural regressions were run to test the theoretical propositions described in the new model. The first SEM, labelled the situation specific SEM, examined the relationships between outcome, officer behavior, specific procedural justice, and specific distributive justice as shown in Figure 5.1. This tests the first, second, and third theoretical propositions and corresponding hypotheses. If officer behavior impacts individual perceptions, a relationship between the officer behavior manipulation and

specific procedural justice perceptions would be seen. If the fair process effect is operating in officer-citizen interactions, a significant relationship between perceptions of procedural justice and perceptions of distributive justice would be expected. At this point, there is no need to add any control variables to the structural model, as all measures are specific to the vignette which contains random assignment. If pre-test balance is shown in the first MIMIC models, including control variables would be unnecessary.
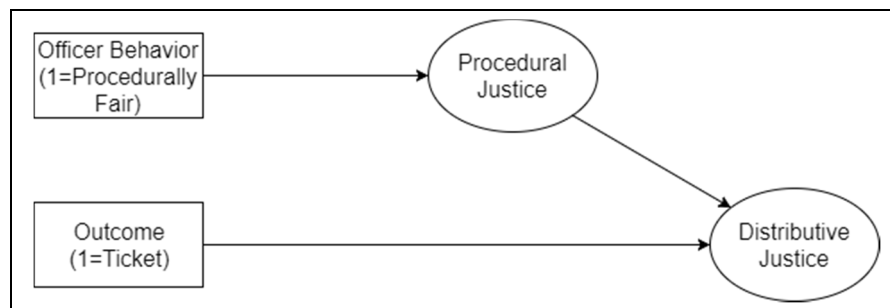
Figure 5.1. Situation Specific Structural Equation Model

For comparison, however, another structural equation model – labelled the global structural equation model – that includes the control variables listed in the *Measures* section (global procedural justice, global distributive justice, previously stopped by police, age, gender, race/ethnicity) will be estimated. The relationships observed in the situation specific model are not expected to change, because of random assignment, but this model will allow for the examination of the influence of global attitudes on the hypothesized relationships. That is, the impact of pre-existing attitudes can be compared to the impact of officer behavior on evaluations of procedural justice in specific officer-citizen interactions. This will provide greater confidence in the findings from the situation specific structural equation model.

The legitimacy SEM will explore the fourth hypothesis. To do so, it will take the global structural equation model (described above) and add in the measures of

legitimacy; obligation to obey and trust in the police. Global justice evaluations, specific

justice evaluations, and the control variables will be used to predict the added measures.

In so doing, a mediating relationship will be specified between specific procedural

justice, specific distributive justice, and legitimacy, consistent with the fourth hypothesis.

This model will then estimate the direct and total effects of these theoretical variables to

assess the degree to which the effect of procedural justice on the legitimacy variables is

mediated by distributive justice. The model, excluding control variables, is depicted in

Figure 5.2.
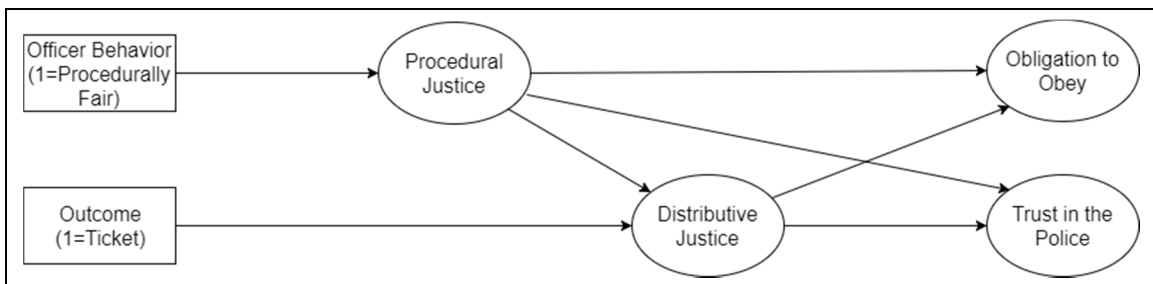
Figure 5.2. Legitimacy Structural Equation Model

The next model, the justice-restoring responses SEM, further builds upon the

legitimacy model by incorporating behavioral responses to conditions of injustice. This

model evaluates the fifth hypothesis, that feelings of injustice and low legitimacy will

increase justice-restoring responses. As with the previous model, this model simply adds

a new endogenous variable to the previously constructed equation. The hypothesis is then

confirmed or rejected based on the regression coefficients between perceptions of justice,

the legitimacy variables, and justice-restoring responses. The model, excluding control

variables, is depicted in Figure 5.3. It should be noted, however, that due to the

measurement issues discussed above, justice-restoring responses will be measured by two

correlated factors, rather than one factor. For ease of interpretability, Figure 5.3 depicts

just one of the factors.
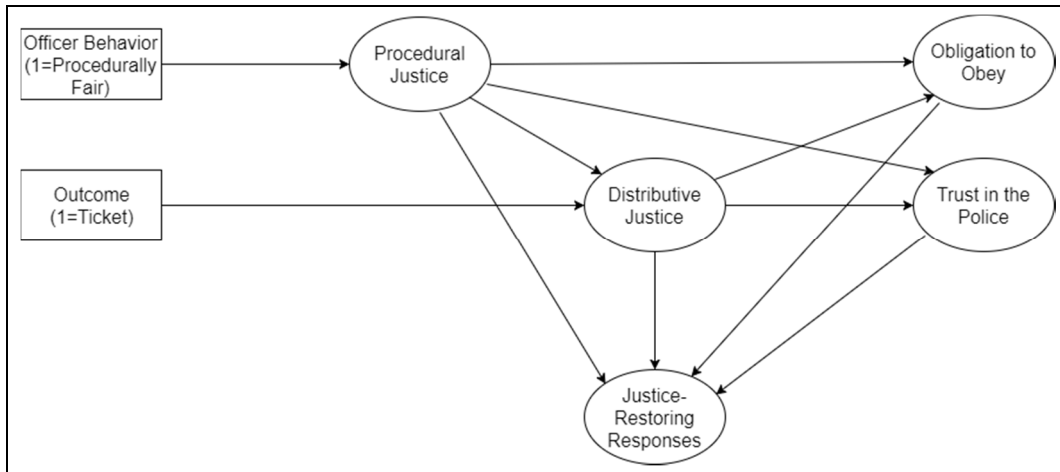
Figure 5.3. Justice-Restoring Responses Structural Equation Model

Interaction Effects

The final set of analyses assess potential interaction effects between outcome favorability, perceptions of fairness, perceived legitimacy, and justice-restoring responses consistent with hypotheses six and seven. To conduct this analysis the data will be split into two samples: one subsample of individuals who received a warning and one subsample of individuals who received a ticket. Structural equation models three and four (see Figures 5.2 and 5.3) will then be replicated on each subsample. As suggested by Paternoster and colleagues (1998; see also Brame et al., 1998), the Clogg and colleagues (1995) formula will be used to determine if significant differences in the regression coefficients between samples exist.

CHAPTER 6

RESULTS

The first set of analyses are MIMIC models examining pre-test balance on global procedural justice and global distributive justice. Keeping in mind that these items were assessed prior to respondents reading the vignettes, these analyses serve to provide evidence that sufficient random assignment was achieved to be confident in the non-spuriousness of the relationships between the vignette condition and situation specific evaluations of procedural justice and distributive justice. The results from these MIMIC models are presented in Table 6.1.

For both pre-test variables and both vignette conditions, all coefficients are not significantly different from zero. Thus, there are no significant differences in global perceptions of procedural or distributive justice across vignette conditions and greater confidence can be placed in the assumption of pre-test balance.

Table 6.1. MIMIC Models Testing Pre-Test Balance

	Completely Std. Coeff.	Latent Std. Coeff.	Standard Error
Global Procedural Justice			
Officer Behavior	0.02	0.04	0.05
Outcome	-0.01	-0.01	0.05
Global Distributive Justice			
Officer Behavior	0.02	0.05	0.05
Outcome	0.02	0.04	0.05

TLI=0.99, CFI=0.99, RMSEA=0.04, SRMR=0.02; *p<0.05, **p<0.01

With pre-test balance established, Table 6.2 examines the coefficients for another set of MIMIC models looking at differences in situation specific procedural and

distributive justice evaluations across vignette conditions. Three coefficients in this analysis are significantly different from zero. When examining a model with a dichotomous variable, it is typically more informative to examine the latent standardized coefficient. This coefficient is standardized on the latent variable (e.g. situation specific procedural justice) but not the dichotomous variable (e.g. officer behavior).

In this model, the officer behavior condition is associated with situation specific perceptions of procedural justice. The latent standardized coefficient can be interpreted to mean that in the procedurally fair officer behavior condition, subjects had situation specific procedural justice perceptions 1.57 standard deviations higher than subjects in the procedurally unfair officer behavior condition. Similarly, subjects in the procedurally fair officer behavior condition had situation specific perceptions of distributive justice 0.99 standard deviations higher than subjects in the procedurally unfair officer behavior condition. Finally, the coefficient for changes in situation specific procedural justice perceptions by the outcome condition is significant, but is substantively small (β=-0.07). As such, caution should be utilized in drawing too many inferences from this relationship. Still, it is worth noting that this relationship is such that when the subject received a ticket in the vignette, respondents rated the procedural fairness of the officer to be slightly lower.

Table 6.2. MIMIC Model Testing Vignette Manipulations

	Completely Std. Coeff.	Latent Std. Coeff.	Standard Error
Specific Procedural Justice			
Officer Behavior	0.78**	1.57	0.09
Outcome	-0.07**	-0.14	0.05
Specific Distributive Justice			
Officer Behavior	0.50**	0.99	0.05
Outcome	-0.01	-0.02	0.05

TLI=0.96, CFI=0.97, RMSEA=0.09, SRMR=0.04; *p<0.05, **p<0.01

Since there is confidence in the pre-test balance assumption, the differences shown in these coefficients are assumed to be due to the vignette rather than pre-existing attitudes towards the police. As such, this test provides preliminary evidence in support of hypotheses one, two, and three. First, the coefficient between officer behavior and situation specific procedural justice evaluations is consistent with the proposition that perceptions of procedural justice will be higher when police officers behave in a manner consistent with the principles of procedural justice. Second, the coefficient between officer behavior and situation specific procedural justice evaluations is consistent with the second proposition that is based on the fair process effect. That is, it shows that distributive justice evaluations likely are partially based on perceptions of officer behavior. The coefficient between outcome and distributive justice was not significant, supporting the third proposition that outcome favorability will play a smaller role than perceptions of procedural justice in forming distributive justice evaluations.

Additional evidence regarding these propositions was found in the next step of the analysis, the situation specific structural equation model (Figure 6.1). This model is a simple path model of the same variables included in the previous MIMIC model (Table 6.2). The previous MIMIC model only established a link between perceptions of distributive justice and the officer behavior condition, not perceptions of the officer's behavior. This structural model on the other hand, has the advantage of specifying a path between situation specific perceptions of procedural justice and situation specific perceptions of distributive justice to directly test the second theoretical proposition. As these variables are all still specific to the vignette and pre-test balance was established, there is no need to include control variables in this model.

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Consistent with the MIMIC models, the structural model in Figure 6.1 supports the theoretical propositions. Officer behavior is strongly and significantly associated with situation specific perceptions of procedural justice (β=0.78). With regards to the fair process effect, situation specific perceptions of procedural justice are associated with situation specific perceptions of distributive justice (β=0.70). Finally, outcome is significantly associated with situation specific perceptions of distributive justice, though this relationship is small and in the opposite direction of what would be expected (β=0.04). That is, situation specific distributive justice perceptions are higher when the subject was in the ticket condition, as compared to the warning condition. Again, however, given the small substantive size of the relationship, caution should be taken in drawing inferences from this result.

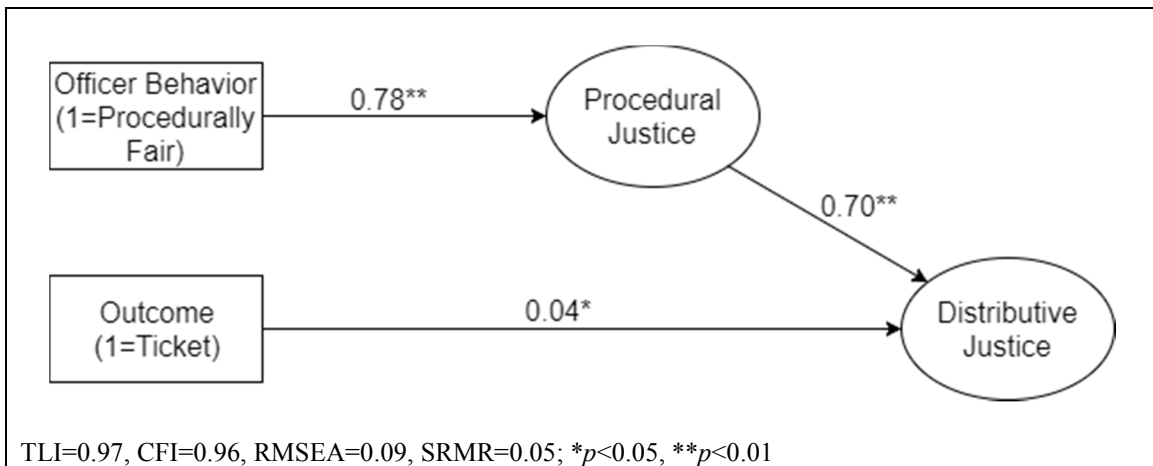TLI=0.97, CFI=0.96, RMSEA=0.09, SRMR=0.05; *p<0.05, **p<0.01

Figure 6.1. Situation Specific SEM

It is important to note that several alternative models to the one presented in Figure 6.1 are possible. That is, the paths presented in Figure 6.1 were specified by the author and the model could be re-estimated with different paths. In fact, the author did

estimate several alternative models.[7] Each of these models had similar fit statistics, providing no clear indication for which model should be chosen. Thus, the author chose the model presented in Figure 6.1 because it was most consistent with the theoretical model presented in this manuscript. While the fact remains that alternative models are just as plausible as the model presented here, each of these alternative models are generally consistent with the theoretical propositions. That is, each model showed significant relationships between officer behavior and procedural justice perceptions, officer behavior or procedural justice perceptions and distributive justice perceptions, and smaller or no relationship between the outcome condition and distributive justice perceptions. As such, despite indeterminacy in the appropriate model, confidence can still be placed in the argument that the structural model supports the theoretical propositions.

Before moving on to examine legitimacy, a second structural equation model was examined that incorporated the control variables that would be included in the legitimacy analyses (Table 6.3).[8] This model also contained a path between officer behavior and situation specific distributive justice evaluations, as well as a path between outcome and situation specific procedural justice evaluations. These paths were not included in the model presented in Figure 6.1 but were considered in the alternative models. They are presented here and included in future models in an effort to include the most comprehensive models possible.

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[7] For example, one alternative model contained all of the paths depicted in Figure 6.1, as well as direct paths from outcome to procedural justice and officer behavior to distributive justice.
[8] While structural equation models are typically depicted in graphical form, the models presented from this point forward are presented as tables. They contain the same data as the graphical depictions, but achieve greater clarity due to the large number of paths being specified.

As expected, the inclusion of covariates and additional paths did not significantly change the relationships observed in the situation specific structural model. In particular, the coefficient for the path between officer behavior and situation specific perceptions of procedural justice is exactly the same, and the coefficient for the path between outcome and situation specific perceptions of distributive justice is nearly the same. The relationship between situation specific procedural justice and situation specific distributive justice is again strong and significant (β=0.80). The coefficient for the direct path between officer behavior and situation specific distributive justice is also significant and negative. This is the opposite of what is expected as it means that individuals had lower perceptions of distributive justice when the officer behaved in a procedurally fair manner. However, this ignores the fact that there is an indirect path between officer behavior and situation specific distributive justice that operates through situation specific procedural justice. The total effect that includes both this indirect path as well as the direct path, is estimated to be β=0.49 (p<0.01). Thus, the true relationship between officer behavior and situation specific distributive justice is positive and significant.[9]

Outside of the relationships already examined, it is also worth noting that the relationships between global perceptions and situation specific perceptions were also significant. That is, global perceptions of procedural justice are associated with situation specific perceptions of procedural justice (β=0.13) and global perceptions of distributive justice are associated with situation specific perceptions of distributive justice (β=0.09). These relationships are expected as global attitudes likely influence the way an individual

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[9] It is difficult to interpret the meaning of the officer behavior/situation distributive justice direct relationship. It would mean that officer behavior is associated with lower evaluations of distributive justice holding evaluations of officer behavior (situation procedural justice) constant.

perceives a specific situation. Several demographic variables also have significant, but weak relationships with the situation specific perceptions.

Table 6.3. Global SEM

Dependent Variable:	Procedural Justice		Distributive Justice	
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error
Situation Procedural Justice	--	--	0.80**	0.04
Officer Behavior	0.78**	0.09	-0.13**	0.08
Outcome	-0.07**	0.05	0.05*	0.05
Global Procedural Justice	0.13**	0.05	-0.01	0.05
Global Distributive Justice	0.08*	0.05	0.09*	0.05
Age	-0.06**	0.01	0.06**	0.01
Female	-0.04**	0.05	0.05*	0.05
Black	0.03	0.09	-0.03	0.08
Hispanic	-0.01	0.07	-0.04	0.07
Other	-0.01	0.09	-0.04*	0.09
Stopped by the Police	0.01	0.05	0.07**	0.05

TLI=0.96, CFI=0.97, RMSEA=0.05, SRMR=0.05; *$p<0.05$, **$p<0.01$

Legitimacy and Justice-Restoring Responses

The analyses to this point have established support for the first three theoretical propositions, all of which deal with how officer behavior and outcome impact situation specific evaluations. The next set of analyses attempts to connect these concepts with the concept of legitimacy using the obligation to obey and trust in the police measures, and justice-restoring responses using the procedural and distributive justice-restoring response measures. In estimating the structural models, all of the paths from the previous structural equation model are included. However, since these paths are unchanged from the previous models they are not presented again because the coefficients are identical. Still, they are used to estimate the total effects (direct effect plus indirect effect) for certain relationships so their presence should be kept in mind.

Table 6.4 presents the first of these analyses with obligation to obey and trust in the police as the dependent variables of interest. Situation distributive justice has a

significant relationship with both legitimacy variables. Situation procedural justice does not have a significant direct relationship with either obligation to obey or trust in the police, but since it is closely related to situation distributive justice (see Table 6.3), it does have a significant total effect for obligation to obey ($\beta=0.25$, $p<0.01$) and trust in the police ($\beta=0.19$, $p<0.01$). Thus, situation procedural justice is related to legitimacy through the intervening mechanism of situation distributive justice, consistent with the fourth theoretical proposition.

Table 6.4. Legitimacy SEM

Dependent Variable:	Obligation to Obey		Trust in the Police	
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error
Situation Procedural Justice	0.02	0.04	0.06	0.04
Situation Distributive Justice	0.29**	0.04	0.17**	0.03
Officer Behavior	-0.07	0.09	-0.09*	0.10
Outcome	-0.01	0.05	0.01	0.05
Global Procedural Justice	0.30**	0.06	0.54**	0.07
Global Distributive Justice	0.16**	0.05	0.15**	0.06
Age	0.14**	0.01	0.11**	0.01
Female	-0.08**	0.06	0.05*	0.06
Black	-0.01	0.10	-0.08**	0.10
Hispanic	0.05	0.08	-0.03	0.07
Other	-0.02	0.09	-0.06**	0.10
Stopped by the Police	0.03	0.05	-0.03	0.05

TLI=0.96, CFI=0.96, RMSEA=0.05, SRMR=0.06; *$p<0.05$, **$p<0.01$

In addition to these situation specific relationships, global procedural justice and global distributive justice also have significant relationships with the legitimacy variables. In fact, global procedural justice has the strongest standardized coefficient of any of the variables included in the model for both obligation to obey and trust in the police. As noted previously, the majority of the literature reviewed in this manuscript has been cross-sectional in nature. Thus, the measures of procedural and distributive justice were predominantly global measures. These results are consistent with Tyler's model and prior research, in that global procedural justice is the strongest predictor of legitimacy.

The last coefficients of note are the relationships between officer behavior and the legitimacy variables. As with procedural justice, these coefficients are slightly misleading as officer behavior has a number of indirect paths to the legitimacy variables. In fact, the total effects of officer behavior on obligation to obey (β=0.09, p<0.01) and trust in the police (β=0.04, p<0.05) are significant (Table 6.5). Further, the direction of these coefficients suggests that individuals have higher legitimacy evaluations when an officer behaves in a manner consistent with the principles of procedural justice.

Table 6.5. Legitimacy Total Effects

Dependent Variable:	Obligation to Obey		Trust in the Police	
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error
Situation Procedural Justice	0.25**	0.03	0.19**	0.04
Officer Behavior	0.09**	0.05	0.04*	0.05
Outcome	-0.01	0.05	0.01	0.05

TLI=0.96, CFI=0.96, RMSEA=0.05, SRMR=0.06; *p<0.05, **p<0.01

Table 6.6. Justice-Restoring Responses SEM

Dependent Variable:	Procedural JRR		Distributive JRR	
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error
Situation Procedural Justice	-0.23**	0.04	0.17**	0.04
Situation Distributive Justice	-0.26**	0.03	-0.47**	0.03
Officer Behavior	-0.21**	0.10	-0.24**	0.11
Outcome	0.10**	0.05	0.12**	0.05
Global Procedural Justice	0.09*	0.06	0.11*	0.06
Global Distributive Justice	0.06	0.05	0.06	0.05
Obligation to Obey	0.01	0.03	-0.01	0.03
Trust in the Police	0.07*	0.03	0.03	0.03
Age	-0.17**	0.01	-0.20**	0.01
Female	-0.06**	0.05	-0.08**	0.05
Black	0.09**	0.09	0.10**	0.09
Hispanic	0.07**	0.07	0.07**	0.08
Other	0.04	0.09	0.04*	0.09
Stopped by the Police	-0.03	0.05	-0.04*	0.05

TLI=0.95, CFI=0.95, RMSEA=0.05, SRMR=0.07; *p<0.05, **p<0.01

Table 6.6 presents the results of the analysis expanded to include justice-restoring responses. At this point, however, there is a large number of mediating relationships complicating the direct effects presented here. The most easily interpreted relationships

are those between legitimacy and justice-restoring responses. Of these coefficients, only

the path between trust in the police and procedural justice-restoring responses is

significant and is in the opposite direction of what would be expected. That is, individuals

who have greater trust in the police are more likely to engage in a procedural justice-

restoring response.

The total effects of situation procedural justice (β=-0.43, p<0.01) and situation

distributive justice (β=-0.24, p<0.01) are significant and in the expected direction (Table

6.7). That is, when subjects viewed the police in the scenario more favorably they were

less likely to indicate that they would engage in a procedural justice-restoring response.

Additionally, situation procedural justice is more strongly associated with procedural

justice-restoring responses than situation distributive justice, as would be expected given

their similar areas of concern. The total effect of officer behavior on procedural justice-

restoring responses is also significant (β=-0.51, p<0.01). When an officer behaves in a

manner consistent with the principles of procedural justice, individuals are less likely to

engage in a procedural justice-restoring response. Finally, there was a relationship

between outcome and procedural justice-restoring responses such that when an individual

received a ticket, he or she was more likely to engage in a justice-restoring response

(β=0.11, p<0.01).

Table 6.7. Justice-Restoring Responses Total Effects

Dependent Variable:	Procedural JRR		Distributive JRR	
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error
Situation Procedural Justice	-0.43**	0.03	-0.21**	0.03
Situation Distributive Justice	-0.24**	0.03	-0.46**	0.03
Officer Behavior	-0.51**	0.07	-0.34**	0.06
Outcome	0.11**	0.05	0.11**	0.05

TLI=0.95, CFI=0.95, RMSEA=0.05, SRMR=0.07; *p<0.05, **p<0.01

The distributive justice-restoring response coefficients are similarly complicated by the large number of indirect effects not included in the table. The total effect for situation procedural justice is again significant (β=-0.21, p<0.01). Individuals who view the police as having acted in a procedurally fair manner are less likely to engage in a distributive justice-restoring response. The total effect for situation distributive justice is also significant (β=-0.46, p<0.01) and in a similar direction. Consistent with their similar content areas, the total effect of situation distributive justice on distributive justice-restoring responses is stronger than the total effect of situation procedural justice on distributive justice-restoring responses. The total effect of officer behavior on distributive justice-restoring responses suggests that when officers behave in a manner consistent with the principles of procedural justice, individuals are less likely to engage in distributive justice-restoring responses (β=-0.34, p<0.01). Additionally, as with the procedural justice-restoring responses, there was a significant relationship with outcome such that when an individual received a ticket, he or she was more likely to engage in a justice-restoring response (β=0.11, p<0.01).

Interaction Effects

The final set of analyses examined potential interaction effects due to individuals receiving different outcomes in the vignette. To conduct this analysis separate models were run on individuals that received a warning in the vignette and individuals that received a ticket in the vignette. The differences in the coefficients produced by these models were then assessed for significance using the Clogg and colleagues (1995) test recommended by Paternoster and colleagues (1998) and Brame and colleagues (1998).

The first analysis in this set is presented in Table 6.8 and examines interaction effects for

the obligation to obey dependent variable.

Table 6.8. Obligation to Obey Interaction Effects

	Warning		Ticket		Diff
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error	Z-score
Direct Effects:					
Situation Procedural Justice	0.11	0.05	-0.07	0.06	1.73
Situation Distributive Justice	0.22**	0.05	0.33**	0.05	-1.50
Officer Behavior	-0.14**	0.11	0.01	0.15	-2.03*
Global Procedural Justice	0.30**	0.08	0.30**	0.08	-0.07
Global Distributive Justice	0.14*	0.07	0.16**	0.08	-0.31
Age	0.14**	0.01	0.14**	0.01	0.00
Female	-0.10**	0.08	-0.05	0.08	-1.16
Black	-0.01	0.13	-0.01	0.15	0.02
Hispanic	0.04	0.11	0.05	0.11	-0.13
Other	-0.02	0.12	-0.03	0.15	0.32
Stopped by the Police	0.06*	0.07	0.01	0.08	1.38
Total Effects:					
Situation Procedural Justice	0.29**	0.04	0.19**	0.05	1.21
Officer Behavior	0.05**	0.07	0.12**	0.08	-1.64

*$p<0.05$, **$p<0.01$; Warning only model fit: TLI=0.96, CFI=0.97, RMSEA=0.05, SRMR=0.06 ; Ticket only model fit: TLI=0.96, CFI=0.96, RMSEA=0.05, SRMR=0.06

The only coefficients that are significantly different are the coefficients for the

direct path between officer behavior and obligation to obey. This effect is a small part of

a larger total effect between officer behavior and obligation to obey that includes indirect

paths through situation procedural justice and situation distributive justice. This total

effect is not significantly different between the warning and ticket subsamples (warning

β=0.11, $p<0.01$; ticket β=0.16, $p<0.01$; Clogg=-0.18). Thus, in both samples, when an

officer behaves in a manner consistent with the principles of procedural justice, the

individual reports a stronger obligation to obey the police. This relationship is invariant between outcome conditions.

Table 6.9. Trust in Police Interaction Effects

	Warning		*Ticket*		*Diff*
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error	Z-score
Direct Effects:					
Situation Procedural Justice	0.14*	0.05	-0.02	0.06	1.78
Situation Distributive Justice	0.11*	0.05	0.21**	0.05	-1.59
Officer Behavior	-0.14**	0.13	-0.03	0.16	-1.67
Global Procedural Justice	0.52**	0.10	0.56**	0.10	-0.34
Global Distributive Justice	0.18**	0.08	0.13*	0.08	0.77
Age	0.12**	0.01	0.09**	0.01	0.55
Female	0.05*	0.08	0.04	0.08	0.18
Black	-0.05	0.14	-0.10**	0.15	0.95
Hispanic	-0.05*	0.10	-0.01	0.11	-1.28
Other	-0.07**	0.13	-0.05	0.15	-0.48
Stopped by the Police	-0.04	0.07	-0.02	0.08	-0.57
Total Effects:					
Situation Procedural Justice	0.23**	0.05	0.14*	0.05	1.27
Officer Behavior	0.02	0.07	0.06*	0.07	-1.08

*$p<0.05$, **$p<0.01$; Warning only model fit: TLI=0.96, CFI=0.97, RMSEA=0.05, SRMR=0.06 ; Ticket only model fit: TLI=0.96, CFI=0.96, RMSEA=0.05, SRMR=0.06

Table 6.9 presents the same comparisons with the trust in police measure as the dependent variable. None of the coefficients for either the direct or indirect paths are significantly different across outcome conditions. Thus, the relationships observed in the analysis presented in Table 6.4 are not affected by the outcome condition. That is, no interaction effects are present between these predictors and the outcome received.

The results for the models including justice-restoring responses present a similar story. Table 6.10 shows only one significant interaction for procedural justice-restoring

Table 6.10. Procedural Justice-Restoring Responses Interaction Effects

	Warning		Ticket		Diff
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error	Z-score
Direct Effects:					
Situation Procedural Justice	-0.16*	0.06	-0.26**	0.05	1.08
Situation Distributive Justice	-0.29**	0.05	-0.27**	0.04	0.06
Officer Behavior	-0.20**	0.15	-0.24**	0.15	0.68
Global Procedural Justice	0.07	0.08	0.08	0.09	-0.18
Global Distributive Justice	0.05	0.07	0.07	0.07	-0.29
Obligation to Obey	-0.05	0.04	0.08*	0.04	-2.40*
Trust in the Police	0.07	0.04	0.07	0.05	-0.02
Age	-0.18**	0.01	-0.17**	0.01	0.35
Female	-0.04	0.07	-0.08**	0.07	1.28
Black	0.11**	0.12	0.07*	0.13	0.73
Hispanic	0.06*	0.11	0.08*	0.10	-0.45
Other	0.06*	0.13	0.01	0.14	1.32
Stopped by the Police	-0.05	0.07	-0.01	0.07	-0.85
Total Effects:			*		
Situation Procedural Justice	-0.40**	0.05	-0.44**	0.04	0.62
Situation Distributive Justice	-0.29**	0.04	-0.23**	0.04	-0.65
Officer Behavior	-0.47**	0.10	-0.56**	0.11	2.54**

*p<0.05, **p<0.01; Warning only model fit: TLI=0.95, CFI=0.96, RMSEA=0.05, SRMR=0.07 ; Ticket only model fit: TLI=0.94, CFI=0.95, RMSEA=0.05, SRMR=0.07

responses. The effect of obligation to obey is weak and positive in the ticket vignette condition, but insignificant in the warning vignette condition. Thus, in the ticket vignette condition higher obligation to obey evaluations are associated with an increased likelihood to engage in a procedural justice-restoring response. One total effect, the combined direct and indirect effect estimate, had significant differences across outcome conditions. This was the officer behavior vignette condition (warning β=-0.47, *p*<0.01; ticket β=-0.56, *p*<0.01); Clogg=2.54). In both conditions, the officer behaving in a

procedurally fair manner decreased the likelihood that an individual would engage in a

procedural justice-restoring response. However, the relationship was stronger in the ticket

condition. Thus, when an individual receives a ticket, the manner in which the officer

behaves has a stronger impact on the likelihood of an individual engaging in a procedural

justice-restoring response.

Table 6.11. Distributive Justice-Restoring Responses Interaction Effects

	Warning		Ticket		Diff
	Std. Coeff.	Std. Error	Std. Coeff.	Std. Error	Z-score
Direct Effects:					
Situation Procedural Justice	0.22**	0.05	0.15*	0.05	0.73
Situation Distributive Justice	-0.45**	0.05	-0.53**	0.05	1.32
Officer Behavior	-0.26**	0.15	-0.24**	0.15	-0.08
Global Procedural Justice	0.12	0.08	0.10	0.09	0.13
Global Distributive Justice	0.01	0.07	0.11	0.07	-1.23
Obligation to Obey	-0.10*	0.04	0.09*	0.04	-3.01**
Trust in the Police	0.04	0.04	0.01	0.05	0.43
Age	-0.19**	0.01	-0.21**	0.01	0.83
Female	-0.09**	0.07	-0.07*	0.07	-0.40
Black	0.12**	0.12	0.06	0.14	1.16
Hispanic	0.09**	0.11	0.06	0.11	0.51
Other	0.06*	0.13	0.03	0.13	0.75
Stopped by the Police	-0.07*	0.07	-0.02	0.07	-1.34
Total Effects:					
Situation Procedural Justice	-0.17**	0.05	-0.24**	0.05	0.73
Situation Distributive Justice	-0.47**	0.05	-0.49**	0.05	0.72
Officer Behavior	-0.31**	0.07	-0.37**	0.08	1.62

*$p<0.05$, **$p<0.01$; Warning only model fit: TLI=0.95, CFI=0.96, RMSEA=0.05, SRMR=0.07 ; Ticket only model fit: TLI=0.94, CFI=0.95, RMSEA=0.05, SRMR=0.07

Finally, Table 6.11 presents the comparison in coefficients for the distributive

justice-restoring response dependent variable. As with the procedural justice-restoring

response coefficients, the only significant difference concerns the relationship between obligation to obey and distributive justice-restoring responses. In the warning outcome condition, a greater perceived obligation to obey has a small and negative relationship with distributive justice-restoring responses. In the ticket outcome condition, a greater perceived obligation to obey has a small and positive relationship with distributive justice-restoring responses. None of the combined direct and indirect effect estimates were significantly different across outcome conditions.

CHAPTER 7

DISCUSSION AND CONCLUSIONS

This dissertation developed and tested seven theoretical propositions for integrating social psychological research on distributive justice into criminal justice research on procedural justice and legitimacy. Those seven propositions are reviewed here to discuss their status following empirical testing.

P_1: Perceptions of procedural justice will be higher when police officers behave in a manner consistent with the principles of procedural justice.

Nagin and Telep (2017) noted that the first step in confirming the validity of Tyler's (1990) legitimacy theory was to verify that perceptions of procedural justice are shaped by officer behavior and not just other contextual factors, such as pre-existing attitudes towards the police. This dissertation took a similar first step in establishing that differences in the way an officer behaved in a vignette were associated with differences in procedural justice perceptions. Several analyses were run relevant to this proposition including a MIMIC model and two structural equation models. All three models supported the proposition. Thus, Nagin and Telep's concern can be refuted here; differences in perceptions of procedural justice were seen across officer behavior conditions.

P_2: Higher perceptions of procedural justice will lead to higher perceptions of distributive justice.

Consistent with the fair process effect put forth by van den Bos and colleagues (1997), this dissertation proposed that individuals would use procedural cues to form their perceptions of distributive justice. Again, a number of models (MIMIC and structural) were relevant to this proposition and all supported it. Regardless of model specification, individuals used their perceptions of officer behavior to help formulate their perceptions of the fairness of the outcome the officer delivered. Thus, there is reason to believe that the fair process effect does operate in a criminal justice context. Participants in this study formed judgments of outcome fairness based on their perceptions of the officer's behavior during the traffic stop in the vignette.

P₃: Outcome favorability will have a smaller impact on perceptions of distributive

justice than perceptions of procedural justice.

In contrast to the fair process effect, the possibility that distributive justice perceptions were based on outcome favorability was also considered. Consistent with this theoretical proposition, however, the models analyzed here all demonstrated that perceptions of distributive justice were more closely linked to officer behavior and procedural justice than the outcome delivered. In fact, outcome played little no role in the formation of distributive justice perceptions in this study. However, the vignettes presented here contained low-risk outcomes. That is, individuals drove away from the traffic stop regardless of the vignette condition. Other interactions may not be so benign. Officer-citizen interactions can end in citizens having force used against them or being incarcerated. When the outcome has more serious consequences, its role in shaping distributive justice perceptions may be increased. Still, these analyses provide sufficient evidence to believe that the fair process effect is present in officer-citizen interactions and

procedural justice perceptions will be an important predictor of distributive justice evaluations.

P₄: Perceptions of distributive justice will partially mediate the relationship between procedural justice and legitimacy.

The fourth theoretical proposition integrated Tyler's (1990) theory of legitimacy by linking perceptions of distributive justice and procedural justice to legitimacy evaluations. The legitimacy structural model tested this proposition and demonstrated that the effect of situation specific procedural justice perceptions on legitimacy evaluations were mediated by situation specific distributive justice perceptions. That is, situation specific perceptions of procedural justice shape situation specific perceptions of distributive justice, which in turn, impact legitimacy evaluations. This supports Tyler's argument by confirming that procedural justice is an important predictor of legitimacy evaluations. However, this is due to its importance in shaping distributive justice evaluations. Thus, the finding does not refute Tyler's argument, but provides context for why his propositions are accurate.

In addition to the situation specific findings, global procedural justice and global distributive justice had significant relationships with legitimacy as well. These findings also supported Tyler's (1990) theory and were consistent with previous literature on procedural justice, distributive justice, and legitimacy. When examining global attitudes, procedural justice is more important than distributive justice in predicting legitimacy evaluations, though distributive justice is still important.

P₅: Lower perceptions of procedural justice, distributive justice, and legitimacy

will increase the likelihood of behavioral responses to officer-citizen interactions

(e.g. justice-restoring responses).

The social psychological concept of justice-restoring responses was also

considered in this dissertation. In social psychology, justice-restoring responses is a

critical outcome in research on distributive justice (e.g. Markovsky, 1985), though it has

remained relatively unexplored in the criminal justice context. In applying the concept to

the field of criminal justice, there was a need to split the concept into two constructs –

procedural justice-restoring responses and distributive justice-restoring responses –

depending on the focus of the individual's response. Consistent with the theoretical

proposition, situation specific perceptions of procedural and distributive justice were

primary predictors of an individual's likelihood of engaging in justice-restoring

responses. However, legitimacy evaluations did not operate as expected. Though two

measures of legitimacy were employed, only one had a relationship with one of the

justice-restoring response measures. Further, this relationship was in the opposite

direction of what was expected. That is, individuals with greater trust in the police

evaluations were more likely to engage in procedural justice-restoring responses. The

fifth theoretical proposition, then, received partial support.

P₆: Outcome favorability will moderate the relationship between procedural

justice, distributive justice, and legitimacy.

The sixth theoretical proposition proposed moderation effects with legitimacy as

the dependent variable. This proposition was tested with a series of models across

different outcome conditions, which were then compared to determine if the effects were

equivalent. In these models, however, none of the proposed moderation effects were found and the proposition was unsupported. This suggests that it may be best to drop this theoretical proposition. However, given the strong findings in social psychological research regarding the moderating effect of outcome favorability (e.g., Brockner et al., 1997; Brockner & Wiesenfeld, 1996), this finding may be context specific. As mentioned earlier, the outcomes used in these vignettes were all relatively low risk. That is, regardless of whether the individual received a ticket or a warning, the subject still drove away after the officer-citizen interaction. Other interactions may have more serious outcomes, such as arrest. When the outcome is more serious, the proposed moderation may be more likely to occur as the subject encounters greater consequences from variations in the outcome. Still, the findings here cannot speak to this possibility.

P_7: Outcome favorability will moderate the relationships between procedural justice, distributive justice, and behavioral responses to officer-citizen interactions.

Finally, the last proposition proposed moderation effects with justice-restoring responses as the outcome of interest. This proposition also proved problematic as only the obligation to obey measure of legitimacy demonstrated significant differences. Further, this difference was such that individuals with higher perceptions of obligation to obey were more likely to engage in justice-restoring responses, the opposite of what one would expect. On the other hand, there was a significant interaction effect for the officer behavior condition such that the total effect of the officer's behavior on procedural justice-restoring responses was stronger in the ticket condition than in the warning condition. This effect is in the direction anticipated by the work of Brockner and

colleagues (1997). The presence of this interaction in the total effect, but none of the other direct effects, may be due to the strength of the effect. That is, the total effect for officer behavior, because it encompasses a lot of the variation in both procedural and distributive justice, is larger than the effects of either concept individually, and therefore, easier to detect. Still, the evidence is not strong and the validity of this proposition is dubious.

Revisiting the Theoretical Model

The theoretical model proposed in this dissertation received varying levels of support depending on the specific propositions examined. Propositions related to the fair process effect and the importance of distributive justice received considerable empirical support from a variety of analyses. On the other hand, propositions regarding the proposed moderation effects received no support and at times ran counter to the expectations of the theory. Finally, the incorporation of justice-restoring responses had mixed support, with the relationship between perceptions of fairness and justice-restoring responses supported and the relationship between legitimacy and justice-restoring responses rejected. Further testing is needed to confirm these findings before making permanent changes to the theoretical model tested in this dissertation. However, for clarity, a theoretical model consistent with the evidence presented in this dissertation is pictured in Figure 7.1.
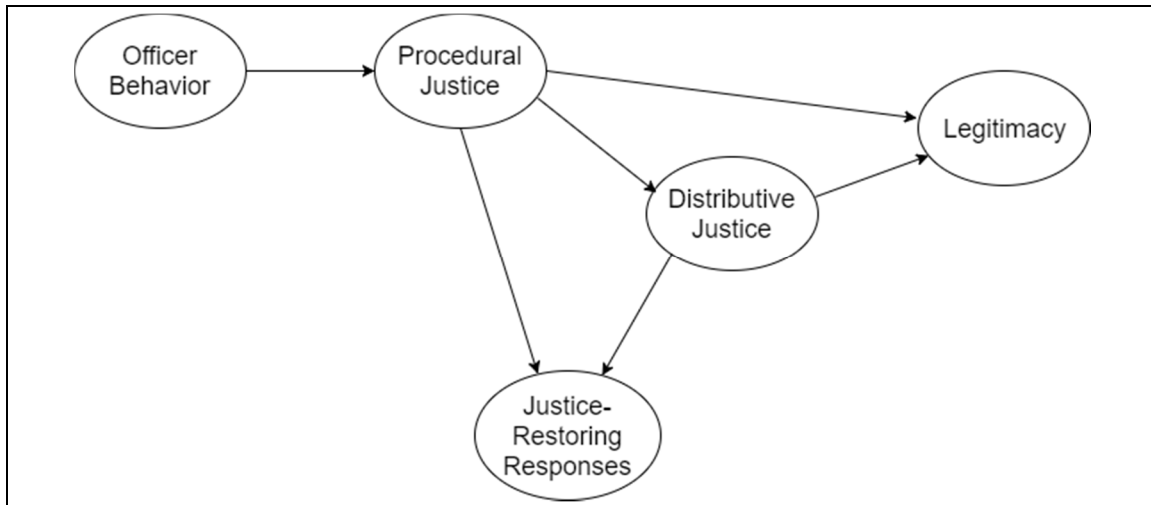
Figure 7.1. Final Theoretical Model

Practical Implications

This dissertation provided practical information for law enforcement in three areas. First, the evidence regarding the fair process effect suggests that law enforcement agencies should look more carefully at their treatment of individuals when claims of outcome unfairness, such as racial bias, are made. Certainly, it may be necessary to examine whether or not racial bias is occurring, but the analyses here demonstrated that perceptions of outcome unfairness are driven by perceptions of officer behavior. Therefore, changing officer behavior is likely necessary to reduce claims of outcome unfairness.

Second, the analyses provided a deeper understanding of when citizens will file complaints regarding an officer-citizen interaction. Police agencies may rely on a convenient excuse regarding complaints – that individuals complain when they receive an outcome they do not like. While the analyses here did show that complaints are more likely when individuals receive an unfavorable outcome, officer behavior was still a strong predictor of justice-restoring responses. Thus, complaints should be taken seriously, as changes in an officer's behavior can reduce the likelihood that a citizen will

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be so unsatisfied with their experience that they file a complaint with the police department or the city.

Finally, the theoretical propositions tested here provide a foundation for understanding large-scale police protests, such as the Black Lives Matter movement. These recent protests have largely focused on complaints of outcome unfairness with respect to police use of force, arrests, and traffic stops. Individuals are more likely to engage in a distributive justice-restoring response – a response that attempts to correct a situation of perceived outcome unfairness – when individuals perceive more distributive injustice. Further, individuals form their distributive justice evaluations, in part, using their perceptions of the officer's behavior. Thus, when an officer behaves in a manner consistent with procedural justice principles, distributive justice-restoring responses are less likely. What remains unexamined, however, are the conditions under which individual justice-restoring responses, such as those examined here, become group-level justice-restoring responses.

Theoretical Implications

From a theoretical perspective, the analyses presented here support the overarching message of this dissertation: distributive justice is important and should not be neglected in studies of the legitimacy of criminal justice institutions. The role and meaning of distributive justice has been neglected in criminology for too long and should be reconsidered given its importance in this theoretical model. Distributive justice is not merely a competing normative component for procedural justice, but is critical to understanding why procedural justice is important to our understanding of legitimacy. Individuals base their judgments of outcome fairness on cues from an authority's

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behavior and decision-making process. These judgments of outcome fairness then impact the legitimacy the individual grants to the authority.

This finding does not contradict the model proposed by Tom Tyler (1990). In fact, the role procedural justice plays is, if anything, more important in this theoretical model. Distributive justice is often an outcome of importance in and of itself. That is, criminologists are often concerned with individuals' perceptions of the fairness of outcomes delivered by criminal justice authorities (e.g., perceived racial bias in traffic stops; see e.g., Tyler & Wakslak, 2004). With the model proposed here, procedural justice becomes a primary predictor of these perceptions. Moreover, in the models proposed here, though the direct effect of situation specific procedural justice was, at times, washed out, it's total effect remained as large as or larger than the total effect of distributive justice. In this way, the importance of procedural justice is not reduced, but contextualized by the proposed theoretical model.

Finally, a wave of criticism over procedural justice and legitimacy in criminal justice has risen to popularity (e.g., Nagin & Telep, 2017). These criticisms point out that most research in the area has been cross-sectional and neglects the possibility that legitimacy evaluations are shaped by a larger sociological context. Proponents of this argument suggest that the relationships found in procedural justice research are spurious and broader sociological concepts should be emphasized over the role of procedural justice. Counter to this argument, however, the results presented here demonstrate that officer behavior can influence perceptions of the police. Further, it joins a growing body of experiments to support the argument that officer behavior matters in forming these perceptions (e.g. Johnson et al., 2017; Lowrey et al., 2016; Mazerolle et al., 2012, 2013;

Maguire et al., 2017). Certainly, there is a need for continued rigorous research in this area to determine the full extent to which officer behavior does impact behavioral outcomes, but disregarding the theory at this point would ignore a growing body of promising research in criminology and decades of strong research in social psychology.

Still, the critics of procedural justice are likely correct in asserting that a broader sociological context matters in determining individuals' legitimacy evaluations. In fact, a number of recent studies have shown that factors other than procedural justice likely influence an individuals' legitimacy evaluations (e.g. Cavanagh & Cauffman, 2015; Fine et al., 2016; Wolfe et al., 2017). However, often ignored in these arguments, is the fact that procedural justice is the one component that the criminal justice system can control. There is little that a police officer can do about parental upbringing, neighborhood conditions, or poverty, but it is well within the ability of every police officer to behave in a manner consistent with the principles of procedural justice.

In sum, though this dissertation focused on the neglected concept of distributive justice, it further reinforces the role of procedural justice in forming attitudes towards the police. As a result, it joins a chorus of scholarly literature in encouraging police departments to embrace procedural justice as a method of improving citizens' attitudes and improving police-community relationships.

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APPENDIX A

VIGNETTES

One of the following vignettes was randomly assigned to each subject.

Low procedural justice – Ticket

You are driving in a 35 miles per hour speed limit zone on the way to work. You are running late, so you exceed the speed limit and drive 45 miles per hour. Blue lights begin to flash in your rearview mirror, so you pull over to the side of the road. A police officer approaches your rolled-down window and says, "What in the hell do you think you are doing? This is a business district with people crossing the street everywhere! You're going to kill somebody! I don't even want to hear whatever lame ass excuse you have for driving like this. I'm so tired of you people thinking you can do whatever you want in this town." The officer takes your license and registration and writes you a speeding ticket.

Low procedural justice – Warning

You are driving in a 35 miles per hour speed limit zone on the way to work. You are running late, so you exceed the speed limit and drive 45 miles per hour. Blue lights begin to flash in your rearview mirror, so you pull over to the side of the road. A police officer approaches your rolled-down window and says, "What in the hell do you think you are doing? This is a business district with people crossing the street everywhere! You're going to kill somebody! I don't even want to hear whatever lame ass excuse you have for

driving like this. I'm so tired of you people thinking you can do whatever you want in this town." The officer examines your license and registration and warns you not to speed again.

High procedural justice – Ticket

You are driving in a 35 miles per hour speed limit zone on the way to work. You are running late, so you exceed the speed limit and drive 45 miles per hour. Blue lights begin to flash in your rearview mirror, so you pull over to the side of the road. A police officer approaches your rolled-down window and says, "Did you know you were driving 10 miles per hour over the speed limit? Are you in a hurry to get somewhere?" The officer then listens to your story about needing to get to work and says, "Well, I'm sorry you're going to be late for work. We have had quite a few accidents in this area with cars hitting pedestrians as they cross the street. Driving 10 miles per hour over the speed limit in an area like this is quite dangerous, so I'm going to give you a speeding ticket. Please take care to drive safely through here next time." The officer takes your license and registration and writes you a speeding ticket.

High procedural justice – Warning

You are driving in a 35 miles per hour speed limit zone on the way to work. You are running late, so you exceed the speed limit and drive 45 miles per hour. Blue lights begin to flash in your rearview mirror, so you pull over to the side of the road. A police officer approaches your rolled-down window and says, "Did you know you were driving 10 miles per hour over the speed limit? Are you in a hurry to get somewhere?" The officer

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then listens to your story about needing to get to work and says, "Well, I'm sorry you're going to be late for work. We have had quite a few accidents in this area with cars hitting pedestrians as they cross the street. Driving 10 miles per hour over the speed limit in an area like this is quite dangerous, so I'm going to give you a warning ticket. Please take care to drive safely through here next time." The officer examines your license and registration and warns you not to speed again.

APPENDIX B

PILOT STUDY

128 students from two Criminal Justice classes at the University of South

Carolina were surveyed as part of a pilot study to establish the validity of the vignette and

measures used in this dissertation. To start the survey, data was collected on age, gender,

race, and prior contacts with the police. The sample had a mean age of 20.8 with 50.0%

of participants identifying as male and 77.3% identifying as White. This approximates

with statistics from the University of South Carolina's Fact Book on the make-up of the

undergraduate student population (42.1% male, 76.7% White, no information available

on age). 26.6% indicated that they had previously been in contact with the police as the

victim of a crime. 23.4% indicated that they had previous contact with the police as the

suspect of criminal activity, not including minor traffic violations, and 31.3% indicated

that they had been in contact with the police as a suspect of a minor traffic violation such

as speeding.

Pilot Analytic Strategy

To assess the quality of the measures utilized in the pilot study, several analytic

steps will be taken for each measure. The primary goal of these steps will be to determine

the appropriate way to utilize each measure in the dissertation. The purpose of using any

scale or factor score method is to reduce a number of items into a manageable and

theoretically important measure. While such data reduction is helpful for theoretical

testing, it necessarily causes a loss of some finer differences in the data. Thus, in

determining the number of factors that are present a balance must be struck between sufficient data reduction, theoretical significance, and accurately representing the data (Ledesma & Valero-Mora, 2007). The following analytic steps will be taken to ensure that the proper balance is struck.

First, a scree plot will be created displaying eigenvalues for every possible number of factors.[10] Eigenvalues are calculated using the correlation matrix to determine how items are correlated together (Crocker & Algina, 1986). The most common method for analyzing scree plots is to use the eigenvalue-greater-than-one (K-1) rule proposed by Kaiser (1960). The K-1 rule states that the number of factors present in the data is equal to the number of factors for which an eigenvalue greater than one is computed. A horizontal line will be placed on each scree plot at an eigenvalue of one to assist in interpretation of this rule. However, the analysis will not rely on a single rule and will also utilize the visual assessment of the scree plot proposed by Cattell (1966). In this method, the number of factors is determined by the point at which the scree plot levels off. The number of factors prior to the last significant drop off in eigenvalues is retained using this rule. These two rules will provide guidance for the number of factors that will be extracted using exploratory factor analysis.

With the suggestions of the scree plot in hand, exploratory factor analysis will be used to extract the recommended number of factors from the items. These analyses will help in two ways. First, the extraction will help reveal whether the items are behaving in a manner consistent with theoretical expectations. That is, it will help assess which items belong to which factors to determine if the factors extracted are theoretically relevant.

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[10] The number of possible factors in a scree plot is equal to the number of items (Crocker & Algina, 1986).

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Prior literature on the measures being analyzed will guide whether the extracted factors are theoretically relevant. Second, the extraction will help determine if any of the individual items are problematic. Items with low loadings will be examined to determine if they should be removed from the survey. Although some scholars have used statistical significance to determine if an item's loading is insufficient, statistical significance is not the primary concern of factor analysis. That is, exploratory factor analysis is concerned with creating the best possible measure of a theoretical construct. For this reason many researchers have instead used .3 as the smallest acceptable loading (Beavers et al., 2013; Gorsuch, 1983). Gorsuch (1983) noted that because some factor analytic methods capitalize on chance relationships items with loadings less than .3 may be statistically significant. Gorsuch also highlighted that factor analysis should be concerned with relationships that are not only statistically meaningful, but theoretically meaningful. As a result, items with loadings smaller than .3 in the pilot study data will be considered problematic and removed from future analyses.

Lastly, the overall quality of the factor extraction method will be assessed by examining the proportion of variance explained by the factor extraction and Cronbach's alpha. The proportion of variance explained does not have a clear accepted cutoff, but is often used as a comparative measure to determine which analyses explain more variance. Researchers tend to consider a Cronbach's alpha of .7 or greater an acceptable level of reliability and internal consistency (Lance, Butts, & Michels, 2006; Nunnally, 1978).

Despite this rather extensive review of suggested cutoff points for various measures of fit, no single rule will be used to determine the unidimensionality, reliability, or overall quality of any measure. Furthermore, the author cautions readers against any

research that does suggest hard rules for any measure. Lance and colleagues (2006) provides an insightful description of how traditionally accepted cutoff rules (for example, Cronbach's alpha>0.7) are urban legends that develop from kernels of truth. Nunnally's (1978) discussion of cutoff values is more nuanced than implied, Cattell's (1966) scree test is nuanced in and of itself, and Kaiser's (1960) cutoff rule is often criticized for its arbitrary nature. In short, simple cutoff rules are overly simplistic and do not reflect best practices in research. Therefore, analysis of the pilot data will use all of the measures discussed in this subsection to get a comprehensive idea of how the measures presented here might best be adapted and analyzed. All decisions will be made with consideration of multiple measures and theoretical implications, thereby eliminating the arbitrary nature of a singular, overly simplistic cutoff rule.

Global Procedural Justice

Global procedural justice was measured using 11 items adapted from Tankebe (2013) and Tyler and Jackson (2014). Items asked for participants to rate how often the police engaged in behaviors consistent with the concepts of fairness of interpersonal treatment and the procedural fairness of decision-making from 1 (Never) to 5 (Always).

A scree plot of the global procedural justice items (Figure B.1) supported the unidimensionality of the global procedural justice concept. Tyler and colleagues have argued for the treatment of procedural justice as a concept made up of multiple factors (Tyler & Blader, 2000; Tyler & Huo, 2002; Tyler & Lind, 1992), and Tyler and Jackson (2014) used many of these same items to represent two different factors. However, criminal justice researchers have typically treated the concept as unidimensional (see e.g. Bradford, 2014; Bradford et al, 2014; McLean & Wolfe, 2016; Reisig, Bratton, & Gertz,

2007). This approach is supported by the scree plot's indication of a single factor being
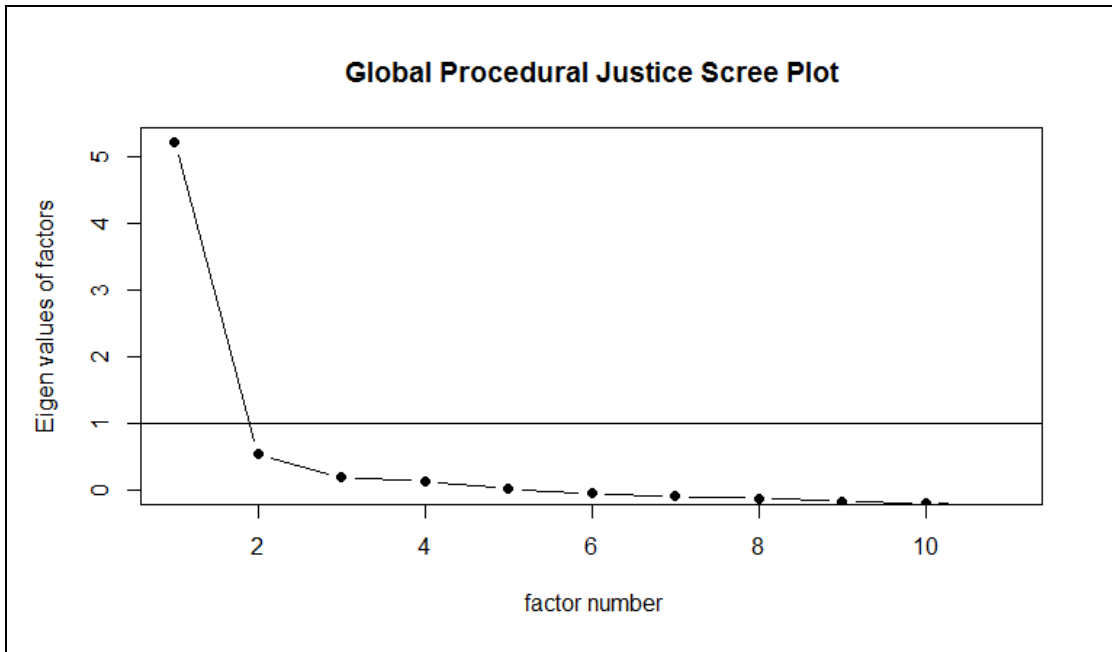
present in the items.

Figure B.1. Global Procedural Justice Scree Plot

Table B.1. Exploratory Factor Analysis of Global Procedural Justice

Item Number	Factor Loading	Communality
1	.82	.67
6	.80	.64
10	.79	.63
3	.73	.54
4	.72	.52
5	.70	.49
8	.68	.47
2	.64	.41
7	.56	.31
11	.53	.51
9	.51	.26
Sum of Squared Loadings	5.21	
Proportion of Variance Explained	.47	

Next, exploratory factor analysis using principal axis factoring was conducted to

extract a one-factor solution for the global procedural justice items (Table B.1). The

results indicated strong loadings on a single factor, with loadings greater than .50 on every item. The proportion of variance explained by a one factor model is .47. Additionally, Cronbach's alpha for the items indicated strong internal consistency (α=.90). Therefore, the unidimensionality of global procedural justice was supported by the results of the factor extraction. In sum, data from the pilot study supported the validity of these items as a measure of a one-factor conceptualization of global procedural justice. As a result, these items will be retained in their entirety for the dissertation.
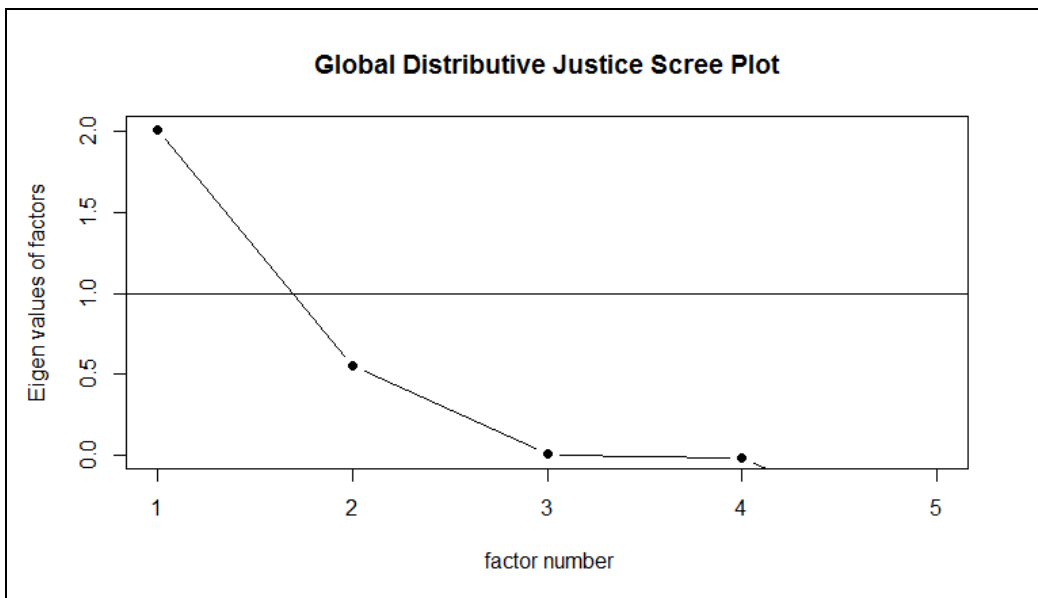

Figure B.2. Global Distributive Justice Scree Plot

Global Distributive Justice

Items for the global distributive justice measure were adapted from Tankebe (2013) and Tyler and Wakslak (2004). These items were designed to assess whether an individual thought that citizens typically received fair outcomes at the hands of the police and whether fair outcomes were unevenly distributed across different groups (e.g. race, gender, or age). All responses were given on a Likert-style scale from 1 to 5. Previous

research has typically treated this concept as unidimensional (e.g. Tankebe, 2013), though Tyler and Wakslak (2004) separated distributive justice into two factors, one concerning fairness of outcomes related to individuals (e.g. "Individuals typically receive fair outcomes") and one concerning fairness of outcomes across groups (e.g. "Outcomes are distributed differently by race").

Kaiser's (1960) eigenvalue-greater-than-one rule would suggest a one-factor solution for the global distributive justice measure. However, Cattell's (1966) suggestion is less obvious as the drop off in eigenvalues between one factor and two factors was not as significant as it was in the global procedural justice scale and the drop off between two factors and three factors is sizeable. Cronbach's alpha did, however, demonstrate strong internal consistency supporting a one-factor model of distributive justice (α=.73). Exploratory factor analysis using principal axis factoring was then used to extract a one-factor solution for the global distributive justice items (Table B.2). Despite the suggestion of unidimensionality by the scree plot, the items did not appear to all load sufficiently on a single factor. Rather, two items (items 1 and 2) had loadings at or below .3 on the single factor. Thus, a two-factor model was considered as a potential alternative.

Table B.2. Exploratory Factor Analysis of Global Distributive Justice (1 factor)

Item Number	Factor Loading	Communality
5	.86	.74
3	.83	.68
4	.63	.40
1	.31	.10
2	.28	.08
Sum of Squared Loadings	2.00	
Proportion of Variance Explained	.40	

The two-factor model (Table B.3) was also extracted using principal axis factoring, but employed a promax rotation to allow the two factors to be correlated while

forcing items to load on a single factor (as opposed to cross loading on multiple factors).

Items 3, 4, and 5 loaded strongly on the first factor (all loadings>.6), and items 1 and 2

loaded strongly on the second factor (all loadings>.7). Furthermore, the cumulative

proportion of variance explained increased from .40 in the one-factor model to .62 in the

two-factor model. The two factors in the model were correlated at $r=.25$. In sum, this

suggests that a two-factor model fits better than a unidimensional model.

Table B.3. Exploratory Factor Analysis of Global Distributive Justice (2 factors)

Item Number	Factor 1	Factor 2	Communality
	Factor Loading		
3	**.85**	.01	.72
5	**.84**	.05	.73
4	**.68**	-.07	.45
2	.00	**.78**	.61
1	.04	**.76**	.59
Sum of Squared Loadings	1.90	1.20	
Proportion of Variance Explained	.38	.24	

To further examine the global distributive justice items, the content of the items

was examined in light of the exploratory factor analysis results. This revealed two

possible explanations for the two-factor solution. Items loading on the first factor (3, 4,

and 5) had similar wordings ("How often do the police deliver different outcomes to

individuals because of their…?") and were consistent with Tyler and Wakslak's (2004)

group-based distributive justice. Items loading on the second factor (1 and 2) did not

share the same wording as the items loading on the first factor and were consistent with

Tyler and Wakslak's (2004) individual-based distributive justice. Therefore, there are two

possible ways to treat the distributive justice items. The first way is to treat the concept in

a manner consistent with Tyler and Wakslak (2004) as two correlated factors. However,

the appearance of two factors may be the result of common methods due to the shared

wording, rather than a unique concept. Thus, the second way to deal with these items is to examine a measurement model accounting for common methods variance. This can be achieved through confirmatory factor analysis by specifying a model where all five items load on a single distributive justice factor and the three items with common wording load on a second "methods" factor that is uncorrelated with the distributive justice factor. This model is too complex for stable estimates to be generated by the small sample gathered for the pilot study. Both the correlated factor model and the common methods model will be tested using confirmatory factor analysis in the dissertation to see which approach is preferred.
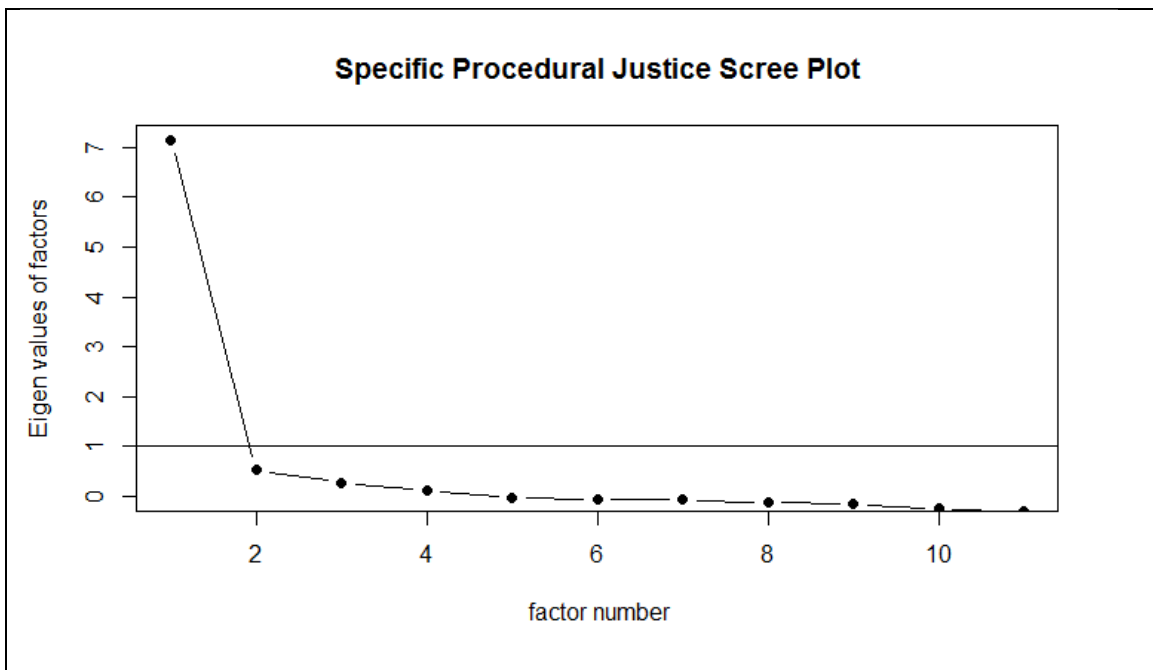

Figure B.3. Specific Procedural Justice Scree Plot

Specific Procedural Justice

Following the vignettes, participants were asked about a number of concepts related to their direct reaction to the vignette. The first concept they were asked about directly related to the vignette was their perceptions of procedural justice in the officer-

citizen interaction. To measure this concept the items from the global procedural justice

measure were adapted to apply specifically to the scenario. For example, the question

"How often do the police make fair and impartial decisions in the cases they deal with?"

became "The police officer in the scenario made a fair and impartial decision."

Respondents were asked to indicate their level of agreement with each item from 1

(Strongly Disagree) to 5 (Strongly Agree). A scree plot of the specific procedural justice

items (Figure B.3) strongly supported the unidimensionality of the specific procedural

justice concept.

Table B.4. Exploratory Factor Analysis of Specific Procedural Justice

Item Number	Factor Loading	Communality
4	.93	.87
2	.92	.84
5	.86	.75
10	.85	.72
8	.85	.72
7	.84	.70
1	.80	.63
3	.75	.56
11	.73	.53
9	.72	.52
6	.56	.31
Sum of Squared Loadings	7.15	
Proportion of Variance Explained	.65	

Exploratory factor analysis using principal axis factoring was used to extract a

one-factor solution from the specific procedural justice items (Table B.4). This analysis

also supported the unidimensionality of the specific procedural justice concept. All items

loaded strongly on a single factor with the smallest loading greater than .50. Cronbach's

alpha of the specific procedural justice measure indicated strong internal consistency, as

well (α=.95).

In addition to exploratory factor analysis, confirmatory factor analysis was also conducted on the specific procedural justice items. Confirmatory factor analysis is utilized only on this measure and the specific distributive justice measure. Best practices in measurement assessments typically suggest using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) on independent samples of the same population to avoid confirming chance relationships found in a particular sample (Gorsuch, 1983; Kline, 2016). However, it is not uncommon for EFA and CFA to be conducted on the same sample when EFA serves to confirm that an instrument is operating in the same manner as an earlier instrument (see e.g. DiStefano & Dombrowski, 2006). Given that the specific procedural justice items and specific distributive justice items are similar to the items from the general procedural justice measure and general distributive justice measure, the EFA conducted on the global items provides a basis for confirming the measurement approach through CFA for the situation-specific items. As a result, the similarity in these scales provides sufficient justification for conducting a CFA on the same sample.

CFA constructs a latent variable using the variance-covariance matrix for items hypothesized to compose a theoretical construct (Kline, 2016). In this case, CFA is used to create a latent variable for procedural justice by examining the variance-covariance matrix for the procedural justice items. To conduct the CFA, a robust diagonally weighted least squares estimator was utilized. While the maximum-likelihood estimator is more common in the CFA literature, it assumes continuous normal data. Prior research has demonstrated that when items have ordered responses representing five or more categories, they can be treated as normal without introducing significant bias into

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parameter estimates or assessments of model fit (Bollen, 1989; Dolan, 1994; Finney &

DiStefano, 2013; Muthen & Kaplan, 1985). However, there tends to be underestimation

in a variety of fit indices when maximum likelihood estimation is used on data with five

ordered categories and small sample sizes (Babakus, Ferguson, & Joreskog, 1987). This

pilot study represents a small sample size for CFA purposes.[11] Therefore, maximum-

likelihood estimation will be used in the dissertation when a larger sample is obtained,

but an alternative estimator must be used here.

The diagonally weighted least squares estimator represents the best alternative

estimator for normally distributed ordered categorical data, as is present in the study.

Diagonally weighted least squares (DWLS) is a less computationally intensive alternative

to weighted least squares estimators (Finney & DiStefano, 2013). Small sample sizes, as

is the case here, can cause difficulty with the traditional weighted least squares estimator,

however, robust diagonally weighted least squares estimators better assess model fit

when sample sizes are small, models are complex, and ordered categorical data is being

used (Finney & DiStefano, 2013). Therefore, the estimator used for the CFA was the

mean and variance adjusted DWLS estimator available in R's *lavaan* package.

The specific procedural justice CFA had mixed results with regards to fit. The

standardized root mean residual (SRMR) was .06. SRMR values below .08 are generally

recognized to represent good fit (Hu & Bentler, 1999). The root mean squared error of

approximation (RMSEA) was .127. RMSEA values above .10 indicate poor fit (Browne

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[11] Minimum sample size recommendations for latent variable analysis range significantly depending on the type of model being estimated and a variety of data considerations (Jackson, 2003; Kline, 2016; Wolf et al., 2013). While some simplistic factor analytic models can be estimated with relatively small sample sizes, some scholars have suggested that journals routinely reject any structural equation models where $N<200$ (Barrett, 2007). For this reason, only simplistic models are estimated for the pilot study and caution is urged when interpreting these models.
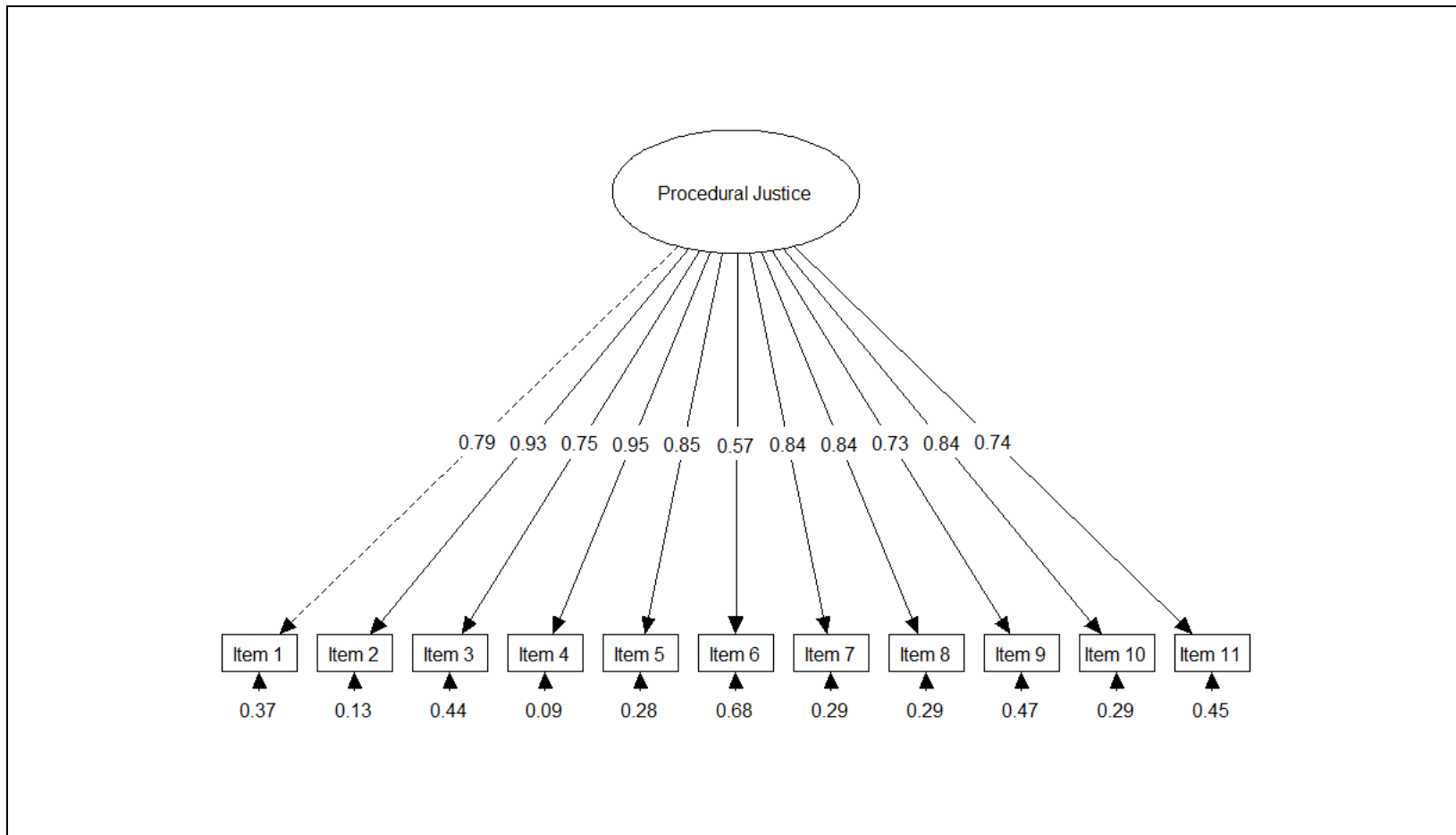
Figure B.4. Specific Procedural Justice Confirmatory Factor Analysis

& Cudeck, 1993). Both the values for the Tucker-Lewis Index (TLI=.90) and

Comparative Fit Index (CFI=.92) were slightly below the suggested cutoff of .95 (Hu &

Bentler, 1998; 1999) indicating that the model was close, but had not achieved good fit.

In sum, the specific procedural justice model appears to be close to achieving good fit.[12]

Given that robust DWLS estimators have been associated with decreased power in small

sample sizes (Lei, 2009), there is reason to believe that with a larger sample size in the

dissertation, the model may be able to achieve good fit.

Table B.5. Exploratory Factor Analysis of Specific Distributive Justice

Item Number	Factor Loading	Communality
2	.86	.73
1	.77	.59
3	.57	.33
Sum of Squared Loadings	1.65	
Proportion of Variance Explained	.55	

Specific Distributive Justice

In addition to asking respondents about their perceptions of procedural justice

specific to the vignette presented, respondents were asked about their perceptions of

distributive justice. Similar to the procedural justice items, items for the specific

distributive justice measure were adapted from the global distributive justice scale. For

example, "How often do the police deliver fair outcomes to the citizens they interact

with?" became "The police officer in the scenario delivered a fair outcome." Again

responses were given from 1 (Strongly Disagree) to 5 (Strongly Agree). The specific

distributive justice items demonstrated good internal consistency (α=.77). Additionally,

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[12] It is also important to note that the fit indices used to assess the CFAs throughout this section have been shown to "overreject true-population models at small sample sizes ($N < 250$)" (Hu & Bentler, 1998, p. 450).

the scree plot supported unidimensionality (not pictured). Thus, a one-factor model was extracted using principal axis factoring (Table B.5). The resulting model demonstrated strong loadings for each item on a single factor (all loadings>.5). The proportion of variance in the items explained by the factor was .55.

While the items from the global distributive justice scale were not found to be unidimensional, the items on the specific distributive justice scale are only consistent with one factor from the global distributive justice EFA. No items from the specific distributive justice measure are consistent with the first factor from the global distributive justice EFA. Therefore, the global distributive justice measure provides sufficient reason to believe that the specific distributive justice scale is unidimensional.[13] A specific distributive justice CFA was not estimated as it would be "just identified" with zero degrees of freedom because there are only three items measuring a single latent variable. Just-identified models can be estimated to obtain parameter estimates, but the sample variance-covariance structure will be perfectly reproduced resulting in an inability to test the hypothesis of model fit (Kline, 2016). Therefore, it is impossible with a just identified model to determine if the measurement model fits.

Still, a larger specific perceptions of justice CFA was run using the same robust DWLS estimator on a correlated factor model of both the specific procedural justice measure and the specific distributive justice measure (Figure B.5). The introduction of the procedural justice items into the variance-covariance matrix allows for better identification of the model. The specific perceptions of justice CFA had mixed results regarding fit, similar to the specific procedural justice CFA (TLI=.89, CFI=.91,

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[13] This is significant because it provides justification for conducting EFA and CFA on the specific distributive justice pilot data.
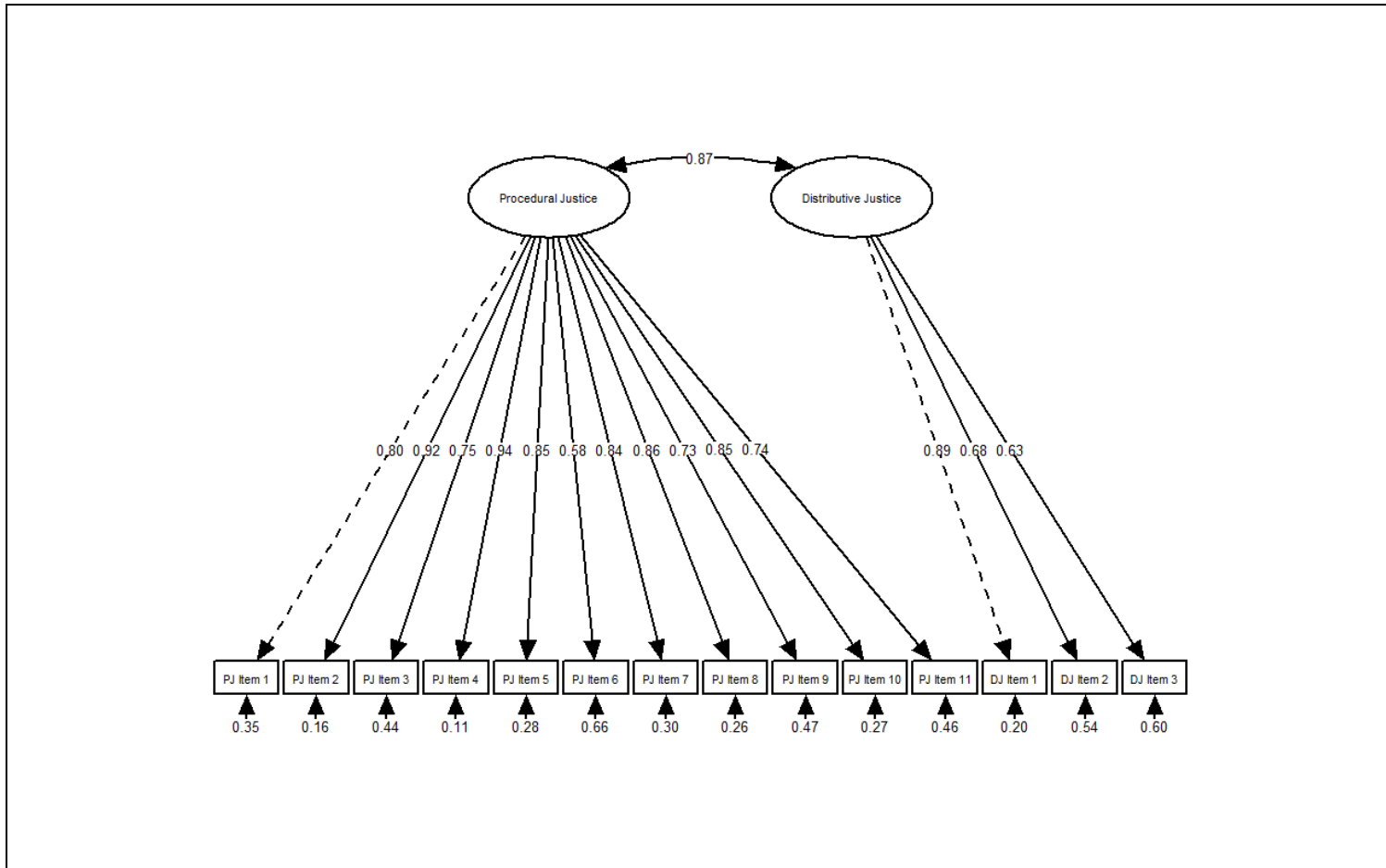
Figure A.5. Specific Perceptions of Justice Confirmatory Factor Analysis

SRMR=.07, RMSEA=.11). Again, however, the CFA may lack power in detecting

theoretical relationships and achieving good fit due to the small sample size. Collecting

more data in the dissertation will likely improve fit, improve the precision of parameter

estimates, and allow for the use of the more powerful maximum likelihood estimator.

One slight concern, however, is that the two factors (procedural justice and distributive

justice) were correlated at r=.87. While it is expected that these two factors would be

correlated, this correlation is so high as to present some concern that subjects are not

distinguishing between the two concepts. Statistical decisions, however, should always be

guided by existing theory (Kline, 2016). Indeed, Gorsuch (1983, p. 33) notes that, "the

problem when a correlation between two factors is 'too high' can only be resolved by

considering the impact of high correlations on the future use of the factors in practical

situations or in theory development." Thus, it is critical to look to other theoretical

research to find the solution to this high inter-correlation. Previous research has also

found significantly high correlations between procedural and distributive justice but

concluded that the two concepts are distinct (Reisig et al., 2007). Following Reisig and

colleagues' (2007) lead, steps will be taken to minimize the correlation, but the concepts

will continue to be treated as distinct.

In considering ways to minimize the correlation, contamination between the two

concepts may have occurred because both concepts were presented in the same matrix on

the survey. For the dissertation, these items will be separated into different matrices in an

attempt to prevent contamination from answering repeated questions about fairness in the

same matrix. No prompting will be given to artificially create differences between the

concepts, but separating the matrices will hopefully prevent participants from becoming

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fatigued by the 14-item matrix, resulting in the participants paying less attention to the last three items in the matrix – the distributive justice items. After the reorganization of the survey and new data is collected, these measures will be examined again and additional steps (e.g. eliminating problematic items) may be taken to further reduce the correlation.

Justice-Restoring Responses

Justice-restoring responses have been described as behavioral or attitudinal reactions to conditions of injustice intended to rectify the condition of injustice in the social psychological literature (Markovsky, 1985). However, to date little has been done to study these responses within criminology and criminal justice.[14] Criminologists have studied how perceptions of justice and injustice influence future interactions with police officers and the law through the concepts of compliance and cooperation (Hough et al., 2010; Metcalfe et al., 2016; Reisig et al., 2007; Reisig & Lloyd, 2009; Reisig et al., 2012; Tankebe, 2013; Tyler & Fagan, 2008). These concepts are distinct from social psychology's justice-restoring responses. Dating back to Adams' (1965) first arguments regarding behavioral responses to injustice, justice-restoring responses have focused on behaviors individuals engage in to attempt to rectify the condition of injustice. Markovsky (1985) operationalized the concept of justice-restoring responses as complaints regarding the rewards or pay an individual received. For this study, respondents were asked how likely they were to file a complaint using a variety of

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[14] One notable exception is research on general strain theory. Agnew's (1992) strain theory posited that individuals would be more likely to experience anger if they experience injustice. Still, these attitudinal reactions are distinct from the social psychological responses that are intended to rectify or "do something about" the condition of injustice.

methods in response to the specific conditions subjects were exposed to in the vignette.[15]
One substantial change from Markovsky's (1985) operationalization to the current
study's operationalization is the ability of subjects to differentiate filing a complaint
regarding the officer's behavior as opposed to filing a complaint regarding the outcome
he or she received. This change was made because Markovsky (1985) was solely focused
on distributive justice, while this study considers both procedural and distributive justice.
Despite this difference, the conceptualization of justice-restoring responses as behaviors
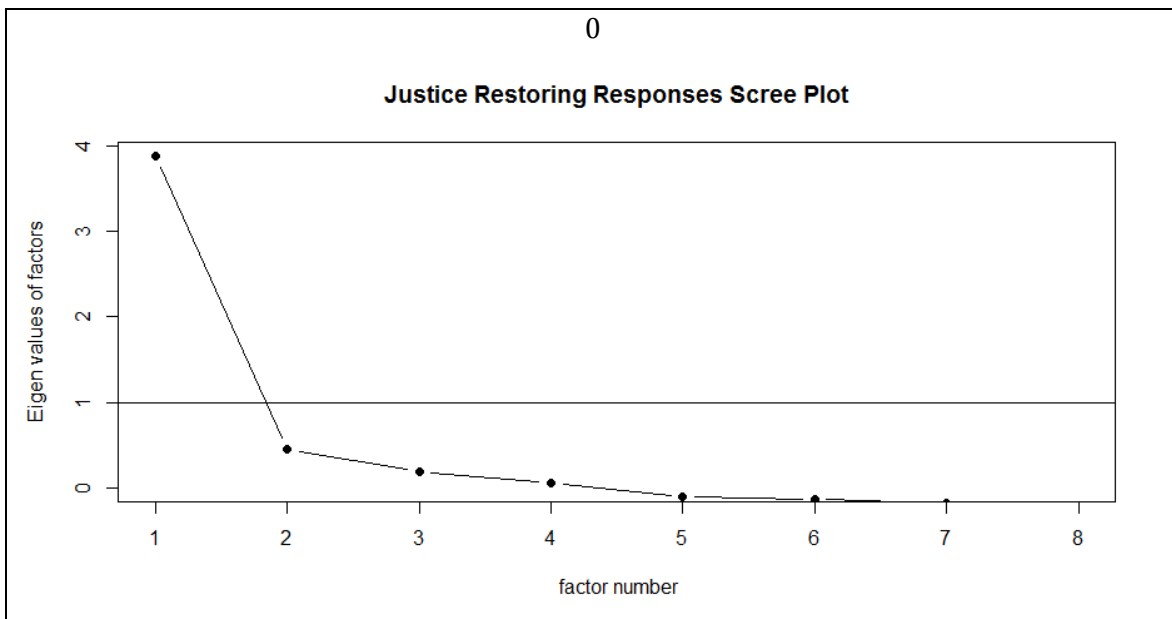individuals use to correct situations of injustice is consistent.

Figure B.6. Justice-Restoring Responses Scree Plot

As these items were developed specifically for this study and allowed individuals
to differentiate between reasons for filing a complaint, exploratory factor analysis were
conducted to determine the factor structure of the concept. The scree plot strongly
supported the unidimensionality of justice-restoring responses with an initial eigenvalue
approaching 4 and a sharp drop off to well below 1 for the second factor (Figure B.6).

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[15] Responses ranged from 1 (Very Unlikely) to 5 (Very Likely).

The factor extraction also supported a single factor with all items except for one

having a factor loading above .40. Item 6, "How likely are you to post positive comments

on social media (e.g. Facebook, Twitter, etc.) about your interaction with the police?"

was reverse coded but did not load on the factor (λ=.04). Therefore, the item was dropped

from the scale creating a more consistent measure of justice-restoring responses (see

Table B.6). The new scale demonstrated strong internal consistency (α=.87) and will be

retained for data collection in the dissertation.

Table B.6. Exploratory Factor Analysis of Justice-Restoring Responses

Item Number	Factor Loading	Communality
3	.87	.76
2	.87	.75
4	.85	.73
1	.80	.64
7	.70	.49
8	.52	.27
5	.47	.22
Sum of Squared Loadings	3.87	
Proportion of Variance Explained	.55	

Police Legitimacy

In addition to measuring concepts related to specific reactions to the vignettes

presented in the study, perceived police legitimacy was also measured. Respondents were

asked to indicate on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree) how

strongly they agreed with 14 statements regarding obligation to obey, trust, and

normative alignment with respect to the police. These items were adapted from Tyler and

Jackson (2014; see also Hough et al., 2014; Reisig & Lloyd, 2009; Tyler & Wakslak,

2004).

A scree plot of the police legitimacy items was conducted to examine whether or

not multiple factors existed (Figure B.7). The scree plot shows only one eigenvalue

greater than 1.0 and a large drop off in eigenvalues between the first and second factors.

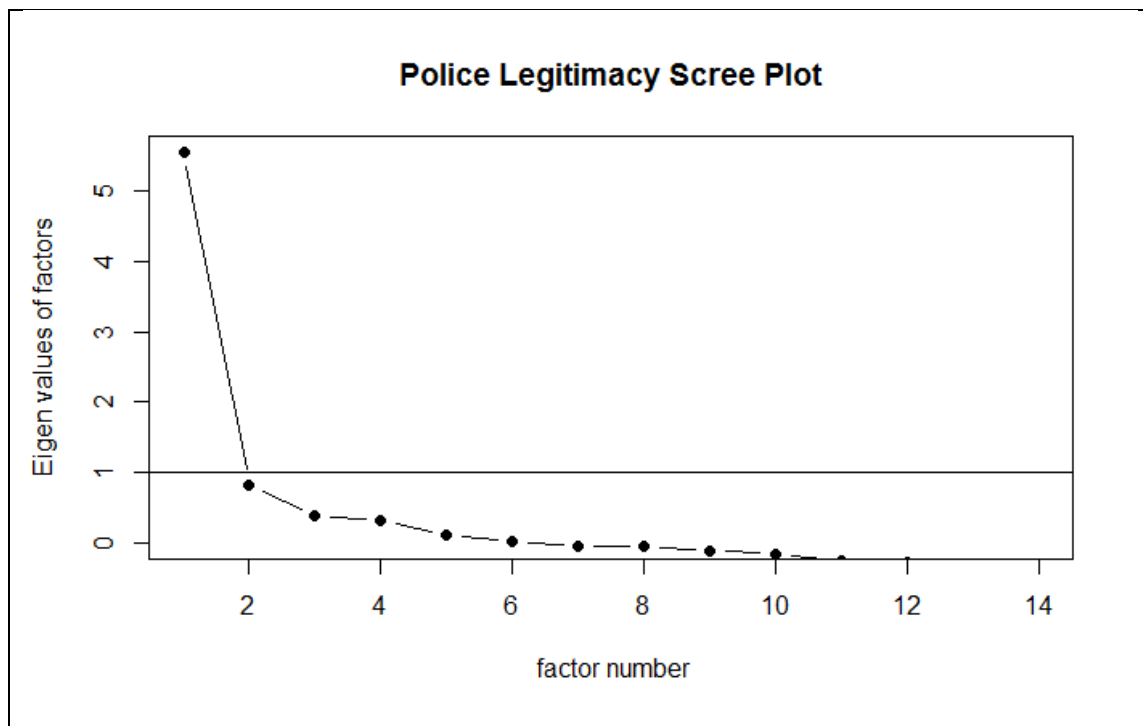This suggests that the police legitimacy concept is unidimensional.

Figure B.7. Police Legitimacy Scree Plot

A one-factor solution was extracted from the police legitimacy items using principal axis factoring. This solution revealed that one item did not load on the factor (λ=.03). This item, "The decisions and actions of the police are unduly influenced by pressure from political parties and politicians" was dropped from the scale. A scree plot of the remaining items also suggested a unidimensional police legitimacy concept. Principal axis factoring was used to extract another one-factor model from the remaining items. The new solution had strong loadings for all items, explained 40% of the variance in the items, and demonstrated strong internal consistency (α=.90).

Vignette Analysis

The use of a pilot study was important for this dissertation not only to test the measures being utilized but also to analyze the viability of the vignettes being employed.

During the pilot study respondents were asked to indicate how realistic the scenario was and how easy it was to place yourself in the situation described. Having a realistic vignette is critical to the generalizability of the findings. While an unrealistic scenario may result in interesting theoretical findings, it would be limited in its ability to speak to real-world policing.
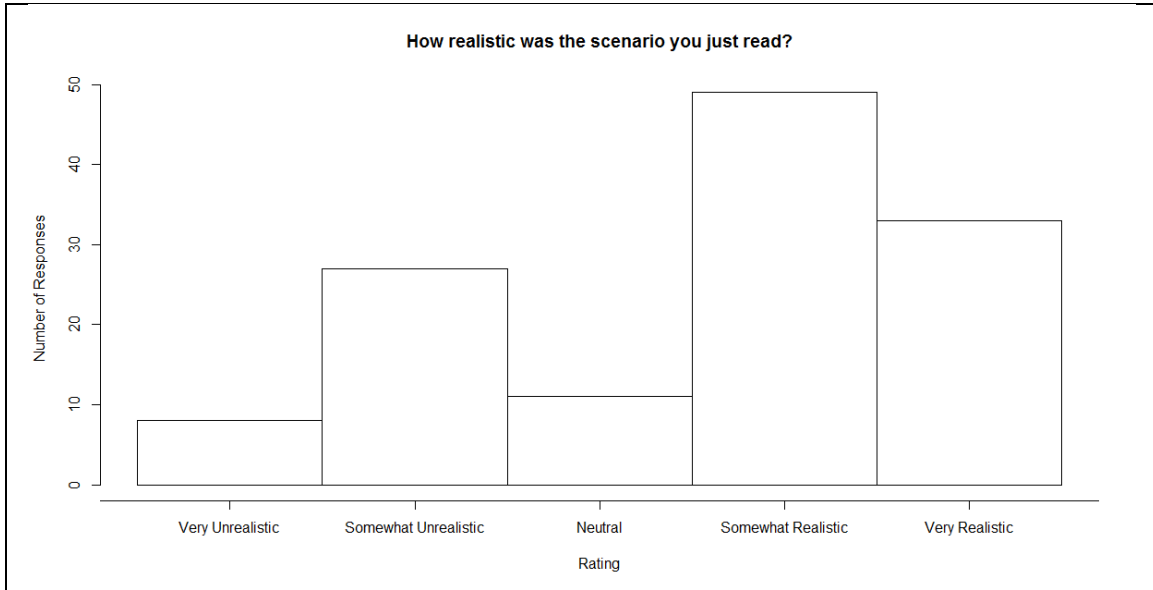

Figure B.8. Histogram of Scenario Realism

Responses to the question "How realistic was the scenario you just read?" were on a scale from 1 (very unrealistic) to 5 (very realistic). The mean rating of all responses to the question was 3.56 or slightly to the realistic side of neutral. A majority of respondents (*N*=82, 64.1%) indicated that they found the scenario somewhat or very realistic (Figure A.8).

Responses to the question "How easy was it for you to put yourself in the place of the individual in the scenario you just read?" were also on a scale from 1 (very difficult) to 5 (very easy). The mean rating of all responses to the question was 4.36 or in between

somewhat easy and very easy. A large majority of respondents (*N*=106, 83.5%) indicated that they found it somewhat or very easy to place themselves in the scenario (Figure B.9).
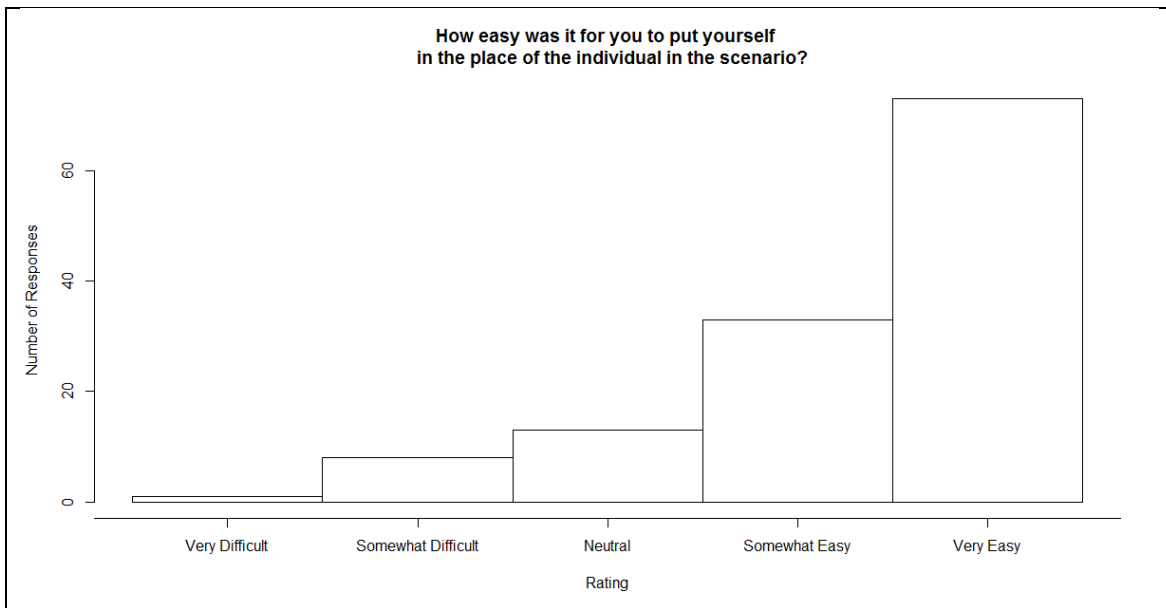

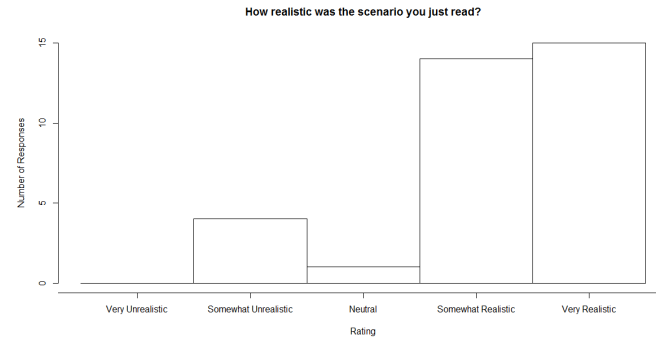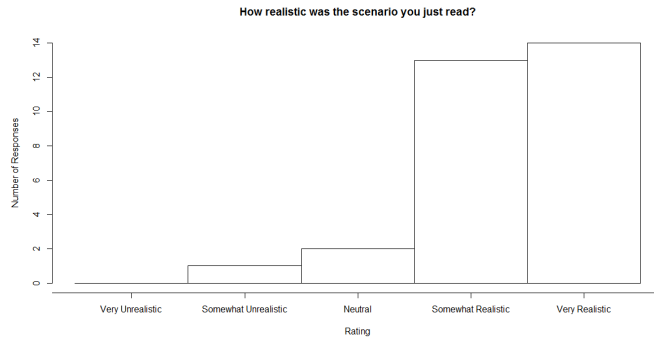**Figure B.9. Histogram of Putting Self in Scenario**

In sum, reviewing all respondents' ratings of the vignettes supports the use of these vignettes as a realistic representation of a police officer-citizen interaction. However, these analyses combine responses to four different vignettes. It is possible that certain vignettes were more realistic than other vignettes. To address this concern, responses to these same questions were examined across the four vignettes. Both high procedural justice conditions were considered realistic with means in the somewhat realistic category (high procedural justice, unfavorable outcome=4.33; high procedural justice, favorable outcome=4.18). Additionally, a large majority of respondents to the high procedural justice vignettes rated the vignette as somewhat realistic or very realistic (high procedural justice, unfavorable outcome *N*=27, 90.0%; high procedural justice, favorable outcome *N*=29, 85.3%).

Table B.7. Comparison of Ratings of Realism of Scenario

Unfavorable Outcome	Favorable Outcome

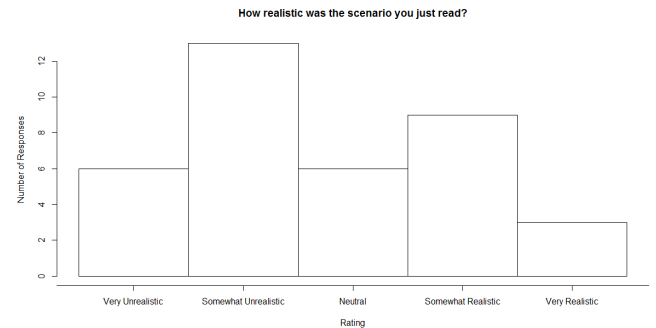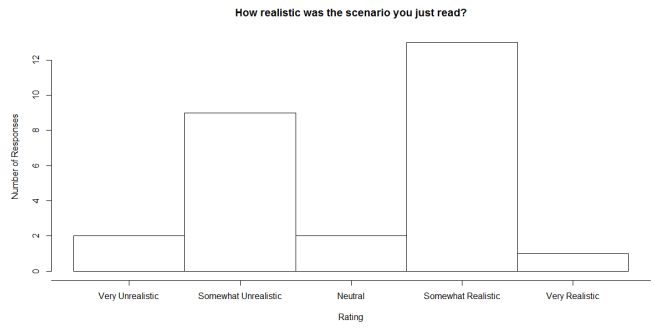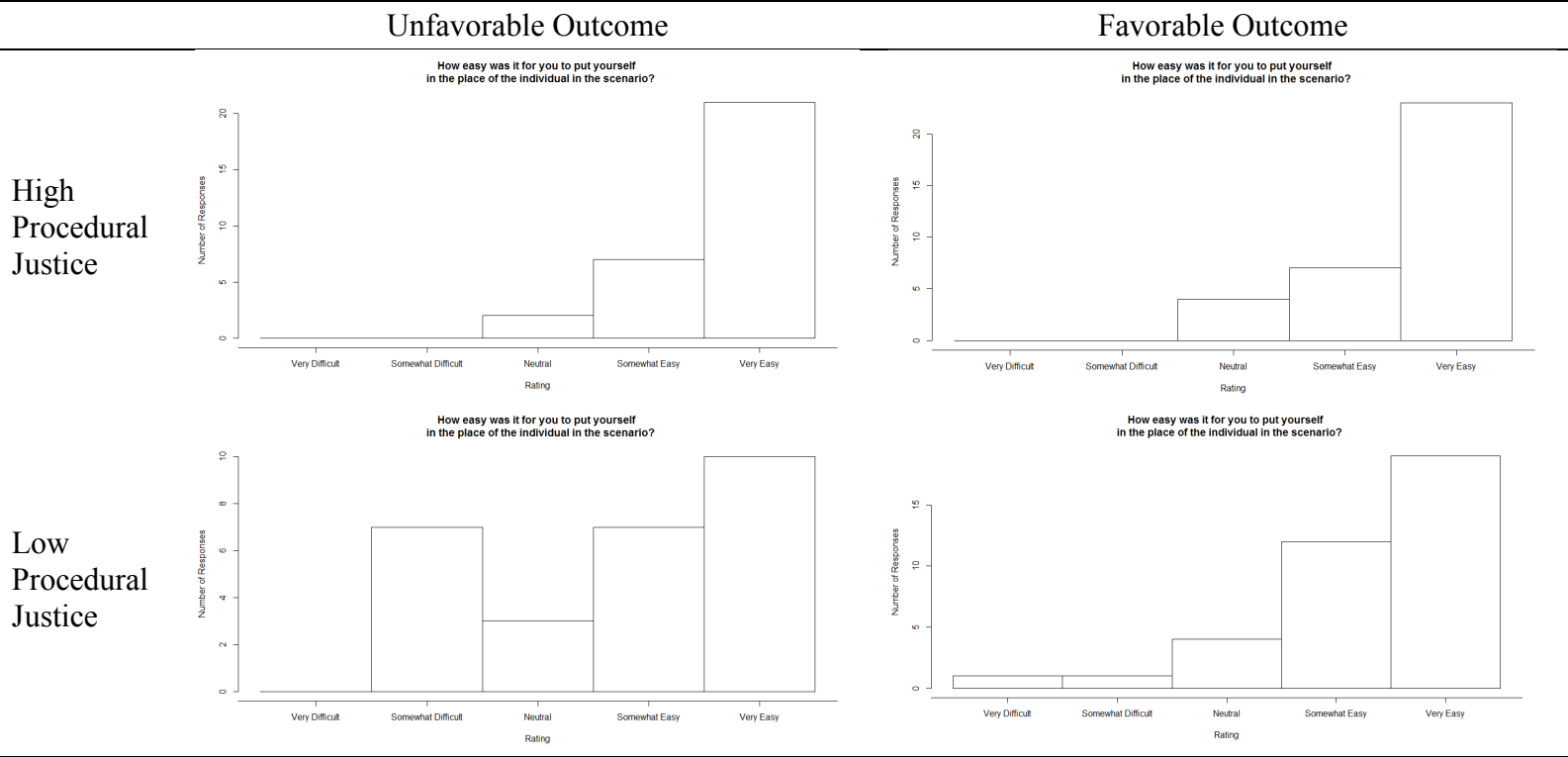**High Procedural Justice**

How realistic was the scenario you just read?

How realistic was the scenario you just read?

Low Procedural Justice

How realistic was the scenario you just read?

How realistic was the scenario you just read?

Table B.8. Comparison of Ratings of Putting Self in Scenario

	Unfavorable Outcome	Favorable Outcome
High Procedural Justice	How easy was it for you to put yourself in the place of the individual in the scenario?	How easy was it for you to put yourself in the place of the individual in the scenario?
Low Procedural Justice	How easy was it for you to put yourself in the place of the individual in the scenario?	How easy was it for you to put yourself in the place of the individual in the scenario?

Responses to the low procedural justice vignette were less positive. The low procedural justice, unfavorable outcome vignette had a mean slightly above neutral at 3.07, but a majority of respondents (*N*=14, 51.9%) rated the vignette as somewhat realistic or very realistic. The low procedural justice, favorable outcome vignette had a mean below neutral at 2.73 with a minority of respondents (*N*=12, 32.4%) rating the vignette as somewhat realistic or very realistic.

With respect to the question "How easy was it for you to put yourself in the place of the individual in the scenario?" the high procedural justice vignettes again showed positive results. Both vignettes had means in between somewhat easy and very easy (high procedural justice, unfavorable outcome=4.63; high procedural justice, favorable outcome=4.56). A large majority of respondents (high procedural justice, unfavorable outcome *N*=28, 93.3%; high procedural justice, favorable outcome *N*=30, 88.2%) indicated that it was somewhat or very easy to place themselves in the place of the individual in the scenario.

Responses to the low procedural justice vignettes were much more positive on this question. Both vignettes had means closest to the somewhat easy rating (low procedural justice, unfavorable outcome=3.74; low procedural justice, favorable outcome=4.27). A sizable majority of respondents (low procedural justice, unfavorable outcome *N*=17, 63.0%; low procedural justice, favorable outcome *N*=31, 83.8%) indicated that it was somewhat or very easy to place themselves in the place of the individual in the scenario.

In sum, the high procedural justice conditions were rated very positively both in terms of realism and ability to place oneself in the situation presented in the vignette. The

low procedural justice conditions were rated as relatively neutral on realism. However, on placing oneself in the situation presented in the vignette both low procedural justice vignettes were rated positively. The vignette that fared the worst was the low procedural justice, favorable outcome condition. This was likely due to concerns that it is improbable that an officer would be procedurally unjust and only issue a warning to a speeding driver. The hypotheses put forth in this study are unable to be answered without this contradiction of procedural injustice and favorable outcomes being present. Additionally, respondents with pre-existing beliefs in high procedural justice and the legitimacy of the police may find it unrealistic that an officer would be procedurally unjust, even if it is an objective possibility. Given that the vignettes were not rated negatively on realism and a majority of individuals found it easy to place themselves in the scenario, the vignettes will be kept as the same for the dissertation.

Summary

Several analyses were conducted on the pilot data in an attempt to insure that the measures were ready for full data collection for the dissertation. To summarize the findings of these analyses (presented in full above), the following considerations will be made for data collection and analyses during the dissertation:

- The global distributive justice model presented a two-factor rather than one-factor solution. As a result, in the dissertation a two-factor model following the theoretical model of Tyler and Wakslak (2004) will be compared to a one-factor model accounting for common methods variance before finalizing the distributive justice measure to be used in full structural equation model analyses.

- The specific procedural justice and specific distributive justice measures were highly correlated, a concern for any type of latent variable analysis. Both measures were contained within a single 14-item matrix listed on one page after the vignette. Thus, there may have been contamination between these two concepts due to their placement in a single, long matrix of questions regarding fairness. In data collection for the dissertation these measures will be separated into two matrices, preferably placed on different pages, though the order of measures throughout the survey will not be altered to do so.

- One item that did not load on the police legitimacy factor will be removed from the survey.

- One item that did not load on the justice-restoring responses factor will be removed from the survey.

APPENDIX C

MEASURES

Situation Specific Procedural Justice

The police officer in this scenario:

1. …treated me with respect.
2. …was courteous to me.
3. …treated me with dignity.
4. …gave me a chance to tell my side of the story before they decided what to do.
5. …explained their decisions and actions in a way that I understood.
6. …provided an opportunity for the decision to be corrected if it was unfair.
7. …made their decisions based on facts, rather than their own personal opinions.

Situation Specific Distributive Justice

The police officer in this scenario:

1. …delivered a fair outcome.
2. …delivered the outcome I deserved.
3. …delivered an outcome that was considered fair under the law.

Legitimacy

1. You should support the decisions of police officers even when you disagree with them.
2. You should do what the police tell you even if you do not understand or agree with the reasons.
3. You should do what the police tell you to do even if you do not like how they treat you.
4. The police in my community care about the people in my community.
5. The police in my community have the skills necessary to do their job.
6. The police in my community approach their job with a strong moral code.

Justice-Restoring Responses

If the events in the scenario happened to you, how likely would you be to:

1. …file a complaint with the police department regarding the police officer's behavior?
2. …file a complaint with the police department regarding the outcome you received?
3. …file a complaint with local government officials regarding the officer's behavior?
4. …file a complaint with local government officials regarding the outcome you received?
5. …post negative comments on social media (e.g. Facebook, Twitter, etc.) about your interaction with the police?
6. …complain about the officer's behavior to your friends or family?
7. …complain about the outcome you received to friends or family?

Global Procedural Justice Evaluations

1. The police treat citizens with respect.
2. The police are courteous to citizens they come into contact with.
3. The police treat everyone with dignity.
4. The police give people a chance to tell their side of the story before they decide what to do.
5. The police explain their decisions and actions in ways that people can understand.
6. The police provide opportunities for unfair decisions to be corrected.
7. The police make decisions based on facts, rather than their own personal opinions.

Global Distributive Justice Evaluations

How often do the police:

1. …deliver fair outcomes to the citizens they interact with?
2. …deliver the outcome individuals deserve?
3. …deliver different outcomes to individuals because of their race?
4. …deliver different outcomes to individuals because of their age?
5. …deliver different outcomes to individuals because of their gender?