

911 Call-takers, the Police, and the Spill-over Effects of Procedural Injustice

by

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ABSTRACT

Calling 911 with the goal of mobilizing a response rarely results in a direct line to the entity one wishes to summon (e.g., police or fire). Rather, individuals connect with call-takers—those who are commonly considered “gatekeepers”—who gather pertinent information from callers and determine whether there is a need to allocate resources accordingly. Importantly, this interaction serves as the first point of contact with the criminal justice system for much of the public. As such, it is particularly troubling to consider how grossly understudied this facet of the criminal justice system is relative to other justice system components. After all, call-takers set the tone and trajectory of an entire incident. For this reason, it is critical to understand their role independently, as well as the impact of their actions on subsequent potential interactions. This dissertation aims to shed light on this matter. Using a mixed model factorial vignette design embedded in online surveys administered to a quasi-representative sample of U.S. adults, this study will assess the impact of call-taker variability in adherence to procedural justice practices on citizens’ willingness to cooperate and the perceived legitimacy of both call-takers and police, as well as the ability of police officers to assuage citizen negative affect via procedurally-just tactics. This work will advance the understanding of how perceptions of one criminal justice actor (e.g., call-takers) impacts the perceptions and deference offered to subsequent criminal justice actors (e.g., police), a process referred to as the “spill-over effect,” as well as the salience of procedural justice tactics.

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CHAPTER 1

INTRODUCTION

There are few more powerful actions at our disposal than the ability to summon the police with a single telephone call. Calling the police is a “culturally scripted enterprise of invoking state authority as a resource for dealing with some particular situation” (Martin, 2016, p. 472). From a young age, we are taught to dial 911 as a de facto response. Car alarm going off incessantly at three in the morning? Call the police. Someone acting atypically around your place of work? Call the police. Just witnessed a traffic accident? Call the police. This dependence on 911 creates a system in which callers are singlehandedly responsible for triggering one of the most powerful bureaucracies in the world and all the legal power that comes with it, including the ability to use deadly force.

Particularly salient to these interactions is the felt entitlement to police services. This develops an orientation among callers that aligns most closely with a customer service framework (Elcessor, 2021; Tracy, 1997; see also Black & Lumsden, 2018). Citizens expect that a 911 call will immediately mobilize call-takers to take the appropriate steps to provide remedial services. However, this expectation is in direct opposition to the public service framework typically espoused by call-takers, requiring callers to demonstrate a need for rather than an entitlement to emergency resources (Elcessor, 2021; Tracy, 1997). This dissimilarity in expectations opens the door for misunderstandings and even hostility, which may have deleterious consequences (see Whalen et al., 1988).

Given the gravity of these interactions, it is critical that emergency call centers operate effectively to ensure citizen satisfaction and appropriate resource allocation are achieved. And with call-takers serving as the nucleus of this system, their position and influence cannot be overstated.¹ Call-takers independently “determine the relevance, importance, and priority” (Wang, 2020, p. 480) of information gathered from callers, partly through “intelligent jumps,” or assumptions concerning what the call-taker truly believes is occurring based on a caller’s description (Wang, 2020). This information is then communicated by call-takers with dispatchers, or directly with police first responders if the call-taker doubles as a dispatcher, and can be incredibly influential in officer judgements of call legitimacy (Moskos, 2007). Notably, this interpretive work leaves room for error (see Gillooly, 2020). Research suggests that inaccurate call-taker and dispatcher descriptions often result in unnecessary excessive use of force (Gillooly, 2020; McNamarah, 2018) and even significant increases in erroneous police shootings (Taylor, 2020; United States Department of Justice, 2020). These mistakes not only introduce the potential for call-takers to inadvertently expand the criminal justice footprint (Lum et al., 2020), but also wrongly direct state-sanctioned violence.

Additionally, considering the emotional volatility intrinsic to 911 calls, call-takers may falter in their efforts to practice procedural justice in their interactions with callers. Although there is only one study to test this theoretical proposition within the call-taker context, the results indicate that among a sample of university students, procedurally

¹ While I acknowledge the critical role of dispatchers in these encounters, call-takers’ direct interaction with callers presents an opportunity for implementing procedural justice and shaping legitimacy perceptions as well as encouraging cooperation and compliance. Additionally, depending upon the jurisdiction, call-takers may serve the dual role of call-taker/dispatchers. As such, centering dispatchers whose sole role is to dispatch in the vignettes described below is beyond the scope of the current study.

unjust treatment at the hands of a call-taker result in greater reluctance to call 911 again in the future or cooperate with call-takers during their investigative series of a 911 call (Flippin et al., 2019). Importantly, this study also found that the actions of call-takers were not only consequential for their own ability to carry out their mandate, but also for the ability of police first responders. Individuals who were treated unjustly were less willing to cooperate with police during future interactions, signaling a potential cross-system spill-over effect (Alward & Baker, 2021; Baker et al., 2014; Brown et al., 2018; Casper et al., 1988; Tatar et al., 2012). Though, this study faces issues with generalizability, given the use of a student-based sample.

Besides this study, the vast majority of crime and justice research focusing on police mobilization has neglected the role of call-takers. This may be partially owed to the relatively contemporary nature of the 911 emergency call system that we are most familiar with today (Neusteter et al., 2019). However, for most individuals, calling 911 represents their first, and possibly only, contact with the criminal justice system (Gillooly, 2020; Leeney & Mueller-Johnson, 2012). Accordingly, opening this black box is critical for understanding the reach of the criminal justice system. This dissertation will serve as a step towards filling this gap.

Intellectual Merits

Among the various actors of the criminal justice system, call-takers “remain one of the most important, albeit least studied and theorized, figures in the policing nexus” (Simpson, 2021, p. 1537). With their examination rarely extending beyond the boundaries of other disciplines (e.g., psychology, sociology, linguistics, and communications), crime and justice scholars have neglected their role by traditionally

thinking of contact with the system beginning with police-citizen interactions. Such a narrowed perspective ignores the potential impact call-takers may have on citizen perceptions of legitimacy and procedural justice judgements. This study serves as an important step in filling this gap in the literature. In applying procedural justice theory, advancements can be made in the role and applicability of procedural justice when taking emergency calls for service, as well as how procedural justice judgements may “spill-over” from one legal authority to another. This has important implications for future research and practice, in that the capacity for police officers to allay individuals’ frustration over perceived procedurally unjust call-taker behavior speaks to the effectiveness of procedural justice tactics. If unjust treatment by call-takers indeed negatively impacts willingness to cooperate with police, this would suggest that researchers employing this theory who fail to account for this actor’s role are missing a fundamental antecedent of justice-judgements for all proceeding justice actors (e.g., police, prosecutors, judges, and correctional staff).

Broader Impacts

While it is difficult to accurately determine how many calls for service are made every year, NENA estimates that the number is around 240 million (NENA, n.d.-a). In 2018 alone, 61.5 million individuals over the age of 16 in the United States had at least one contact with the police (Bureau of Justice Statistics, 2020). Of these contacts, over half were citizen-initiated. Furthermore, calling the police is not a benign decision, with over half of officer-involved shooting encounters beginning with a call to 911 (National Police Foundation, 2020). Given the sheer volume of calls, the share of calls resulting in police response, and the potential for reactive policing to result in bodily harm or loss of

life, it is critical that 911 emergency call centers operate effectively and efficiently. However, centers are plagued by staffing shortages and high turnover rates, demanding workloads, and unstandardized and insufficient training (Davidson, 2018; Gardner & McEntire, 2003; Haight, 2020; Krouse, 2018; Neusteter et al., 2019).

Speaking specifically to training, due to the decentralized nature of the more than 6,000 public safety answering points (PSAPs) across the country, they often function independently, producing issues with consistency and standardization of call-taker training (Neusteter et al., 2019). Each PSAP is managed by a different entity, whether it be at a local or state level, and therefore each have their own requirements and educational expectations (911, n.d.). For example, here in Arizona, a call-taker with the Phoenix Police Department can expect classroom instruction for their first nine months of employment (including 480 hours of training), followed by job training and radio dispatch training (including 840 hours of training) (City of Phoenix, n.d.). Less than thirty minutes away, a Scottsdale Police Department call-taker will undergo nine to eleven months of training, including 160 hours of classroom instruction, up to 480 hours of call-taker training, and up to 560 hours of radio training (City of Scottsdale, n.d.). This variability between two proximal cities demonstrates the acute lack of consistency in call-taker training.

Given this, call-takers may become overwhelmed and behave in ways that result in more harm caused than resolved. Indeed, some call-takers have noted that the lack of high-quality, consistent training increases their occupational stress, and “made prioritizing and managing emergency calls more challenging” (Smith et al., 2019, p. 622). This has resulted in incidents of call-takers lashing out at callers under duress (see

Andrew, 2019) and even hanging up on callers (see Helsel, 2015; Park, 2016) making national news and perhaps casting doubts upon the ability of 911 to appropriately respond to citizen calls for service. However, these interactions do not solely impact perceptions of call-takers, in that the actions of any single criminal justice actor do not exist in a vacuum. Research has shown that citizen perceptions of various criminal justice actors are interdependent upon one another (Baker et al., 2014). With this work largely limited to the “spill-over” of treatment present between police and courts, our understanding of the impact of call-taker behavior on other downstream actors is non-existent.

For these reasons, understanding how best to structure our 911 system and orient call-taker behavior to handle these calls in ways that are conducive to continued cooperation and compliance from citizens towards call-takers and police first responders is imperative. If procedurally unjust call-taker behavior has impacts on the willingness to cooperate with police, this suggests that call-takers not only operate as gatekeepers to *accessing* the criminal justice system (Gilsinan, 1989), but also serve as gatekeepers to citizen *perceptions* of the system. This further indicates that, independent of their own skills, the police suffer at the hands of call-taker misbehavior. If police are able to reverse the negative effect of poor treatment by 911 call-takers as the encounter unfolds through the use of procedural justice, this speaks to the resilience and utility of these tactics, further supporting their continued adoption. Such information also allows for the evaluation of call-taker actions and improving the standardization of training (Neusteter et al., 2019). More academic and practical attention should be given to call-takers’ function, performance, and collaboration with downstream actors, as well as the ways in which training could be improved with this knowledge.

Organization of Dissertation

The remainder of this dissertation will be organized as follows. Chapter Two will provide a comprehensive review of the literature. Namely, procedural justice theory, the call-taker function, and the overlap between these two topics will be discussed. This chapter will lay the foundation for examining call-takers through the lens of procedural justice, a lens often relegated to police officers and other justice actors. Chapter Three will discuss the methods and variables to be used in this study. Chapter Four will present the results of this study. And last, Chapter Five will consider the implications of these findings for theory, research, and practice, as well as discuss the limitations of the study.

CHAPTER 2

LITERATURE REVIEW

Prior to exploring the role of procedural justice in the call-taking context, it is critical to understand how this theory has developed through time. Moreover, it is important to examine procedural justice theory more broadly, past applications, and the history of call-taking. The purpose of this chapter is to review the literature to this end. To do so, this chapter will be organized across three sections. First, an overview of the theoretical development of justice research more broadly will be presented. With roots in relative deprivation theory, equity theory – also known as social exchange theory – and shifts in attention towards allocation procedures, developing a solid theoretical foundation upon which to contextualize later discussions is paramount. Second, procedural justice theory will be discussed in greater detail, with a keen attention to the relational model of authority. Inherent to this discussion is an acknowledgement of the role of social identity in justice judgements and legitimacy perceptions.

The last section will focus on call-takers. The unique role of call-takers as nonlegal arbitrators requires elaboration, particularly as it relates to the applicability of a theoretical framework commonly reserved for legal domains. Furthermore, the nature of call-taker interactions with callers and the impact this may have on considerations of instrumental vs. relational concerns (i.e., distributive vs. procedural concerns) in forming perceptions of justice and legitimacy will be discussed. Lastly, careful consideration of the implications of this study for theory and praxis will be reviewed, as well as the current focus for this research.

Early Research in Justice Judgements

The centuries old study of justice and fairness has experienced incredible theoretical and conceptual progress. With early roots in Plato and Socrates, interest in how individuals form perceptions of these social constructs has inspired much philosophical thought and empirical work (Ryan, 1993). Much of this research has focused on the antecedents and outcomes of two dimensions of justice and fairness perceptions: distributive justice and procedural justice (Cohn et al., 2000; Colquitt et al., 2001). Distributive justice refers to instrumental judgements about the fairness of resource allocation (Tyler, 2000). Procedural justice, on the other hand, refers to relational judgments about the quality of decision-making and interpersonal treatment (Blader & Tyler, 2003). Before discussing these concepts in more contemporary contexts, it is important to understand their historical evolution. This history begins with distributive justice, as much of the early interest in justice and fairness concerned itself with questions of allocation fairness (Blau, 1964; Homans, 1961). The central point of contention amongst distributive justice scholars of the time was which aspects of justice served as the main antecedent of judgements related to fairness of outcomes: equity and deservingness, or need and equality (Cohn et al., 2000).

Following World War II, concerns regarding interpersonal dynamics and perceptions of fairness grew exponentially (Tyler, 1987). During this time, the theory of relative deprivation was introduced (Stouffer et al., 1949). In a study of soldiers' attitudes related to their adjustment to Army life, Stouffer and colleagues (1949) uncovered some paradoxical findings – soldiers with higher educational achievement were less satisfied with their status and position in the Army, as compared to their peers with less education.

As an ex post-facto rationalization, these authors claimed that this was owed to greater levels of education corresponding with loftier aspirations, particularly when compared to what they felt their position and status would be in a civilian context. As such, through subjective assessments of the outcomes they received as well as the outcomes of others, their relative deprivation was a signal of injustice (Tyler, 2000). Though, relative deprivation theory was not the only justice-based theory at the time (Tyler, 1987). The theory served as a catalyst for further scholarly interest in distributive judgements and perceptions of fairness.

Equity theory provided greater intellectual development in the distributive justice literature. Most notably articulated by Adams (1965) and rooted in early work by Homans (1961) who was responsible for first advancing distributive justice theory, the primary concern of equity theory is the ratio between inputs and outputs, or the benefits and burdens doled out relative to the contributions put in (Cohn et al., 2000). When this ratio is equal, equity is achieved (Cook & Hegtvedt, 1983). This can also be understood as the deservingness principle (Adams, 1965; Cohn et al., 2000; Walster et al., 1973). That is, if you receive less than another person, it is not as simple as feeling deprived. Rather, there is greater nuance when one considers investments. Those who receive greater rewards are perceived as deserving them owed to their greater investments (Adams, 1965).

However, this focus on “just deserts” was challenged by other scholars, who argued that *need* and *equality* (see Deutsch, 1975) were largely ignored in scenarios in which equity and deservingness were the primary focus (Cohn et al., 2000). Importantly, deservingness was thought to be more relevant to economic relationships, whereas need

and equality were more relevant to noneconomic relationships (Deutsch, 1975). When considering need, allocations of resources are perceived as being fair if the benefits and burdens doled out are proportional to the needs of the members of the group. Regarding equality, the stated goal of distributive fairness should be extending rewards to all individuals equally, irrespective of their independent inputs (Gilliland, 1993).

To better demonstrate the distinction between equity and deservingness, need, and equality, consider the contemporary debate surrounding healthcare provision (Choma et al., 2018). According to equity and deservingness, healthcare should be extended to those who pay for it. Conversely, under a needs-based ideology, healthcare should be given to those who need it most. Based on equality, healthcare should be provided to everyone, irrespective of their ability to pay for it or their level of need. And while these latter concerns have been supported in social psychology research (see Cohen, 1987), much of the research at the time espoused rules of equity more predominantly.

Shifts to Procedural Justice

Following this early interest in distributive antecedents of justice judgements, a second wave of justice research began – one centering procedural justice (Tyler, 2000). Up until the 1970s, much of this early work wholly ignored or undervalued the role of procedural justice, or relational concerns, in fairness and justice perceptions (Alexander & Ruderman, 1987). This changed considerably, most notably with the publication of Thibaut and Walker's (1975) book *Procedural Justice*. In an evaluation of disputants' perceptions of legal procedures related to dispute resolution, they demonstrated that the process by which the resolution was achieved had a greater impact on fairness judgements than the outcome itself, thus challenging equity models at the time (Thibaut

& Walker, 1978). Regarding the aspects that impacted perceptions of fairness, they found that procedures were viewed as fairer when disputants felt they had process control (at this time, operationalized as voice). Importantly, this ability to have voice was most salient to the extent the individual was able to shape the interactions and subsequent outcomes (Thibaut & Walker, 1978). Thereafter, work by Folger (1977) and Folger and colleagues (1979) further highlighted the role of voice, and the application of this concept extended beyond criminal justice, finding support in organizational settings as well (Rasinski, 1992).

In the eighties, Leventhal (1980) further expanded the concept of procedural justice with his justice judgment model. Under this framework, Leventhal (1980) proposed six rules that shape individual procedural fairness judgments. Namely, procedures that are applied uniformly across demographic landscapes (the consistency rule), are not subject to bias or prejudice (bias suppression rule), are based on facts (accuracy rule), are able to be reversed if found to be fallible (the correctability rule), are able to account for various perspectives (representativeness rule), and are made in alignment with widely accepted morals (ethicality rule), are more likely to be perceived as fair (Leventhal, 1980; Radburn & Stott, 2019).

However, this perspective faced criticism, most notably by Lind and Tyler. These scholars argued that Leventhal's (1980) approach, previous equity research, social exchange perspectives, as well as theories of distributive justice more generally (e.g., Adams, 1965; Blau, 1964; Homans 1961; Walster et al., 1978), placed too much emphasis on self-interest as the motivation for influencing outcomes through process control (Lind & Tyler, 1988; Tyler, 1987). With rational self-interest assumed as the

driving force behind justice judgements, fairness perceptions are enriched to the extent that individuals feel procedures enhance favorable outcomes. The rationality of self-interest refers to instances in which individuals may choose to compromise their short-term self-interests, primarily in an effort to maximize their long-term self-interest (Skitka et al., 2008). However, this orientation oversimplifies, or rather overlooks, the anthropological need to belong (Baumeister & Leary, 1995) and the role of identity (Bradford et al., 2014b).

While a more pervasive concept in psychological research relative to that of criminology, belongingness, or the desire for “frequent, nonaversive interactions within ongoing relational bonds” (Baumeister & Leary, 1995, p. 497), is a fundamental and universal human need (Adler, 1930; Baumeister & Leary, 1995; Maslow, 1968). As such, individuals express a heightened sensitivity to environmental and social cues that serve as signals of their position in desired groups (Pickett et al., 2004). Within the context of the criminal justice system, justice actors who interact heavily with the public (e.g., call-takers and police) likely serve as primary representatives of the state, or a valued group of law-abiding citizens (Bradford, 2014; Sargeant et al., 2016). Thus, how we interface, judge, and orient ourselves to justice and fairness is partially grounded in this deep-seated need to belong – a fundamentally relational motivation in nature – and what cues we receive during interactions with these justice officials will determine our perceived membership with, or exclusion from, the in-group. This process of status recognition communicates significant information about self-validation and self-identity (Festinger, 1954; Tyler & Lind, 1992).

This is not to say that self-interest and belongingness are competing theories. Rather, these two motivations more similarly resemble two sides of the same coin (Lind & Tyler, 1988). Indeed, the social contexts in which one may yield to the other has captured the attention of scholars over the past several decades. However, the impetus behind recognizing the importance of belongingness, and therefore linking the prominence of identity, was the introduction of the group value model of procedural fairness – a model with roots in social identity theory.

The Role of Identity

Social identity theory (SIT) is a social-psychological perspective first introduced by Tajfel (1972). Social identity refers to “the individual’s knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership” (p. 292). According to SIT, individuals use social categories as a means of classifying themselves, as well as those around them, in order to establish self-esteem and self-worth (Ashforth & Mael, 1989; Hogg & Terry, 2014; Turner, 1975). Importantly, social classification is “relational and comparative” (Tajfel & Turner, 1985, p. 16), and has two purposes: it allows individuals to develop a subjective cognitive schema by which to understand their social environment and it allows individuals to then understand their social position in that environment in a meaningful way (Ashforth & Mael, 1989). Additionally, this self-concept comprises a personal identity and a social identity, the latter of which is of particular interest to this study.

Social identity refers to “the perception of oneness with or belongingness to some human aggregate” (Ashforth & Mael, 1989, p. 21), and is often used interchangeably with the concept of “group identification” (Tolman, 1943). Within the context of justice

research, SIT would advance the idea that identification with the police is contingent upon shared morals and values (Sunshine & Tyler, 2003). To this end, the group value model (GVM; Lind & Tyler, 1988), and relational model of authority framework (Tyler & Lind, 1992), propose that identity plays a critical role in perceptions of fairness. With roots in SIT (Tajfel & Turner, 1979), GVM suggests that the quality of treatment doled out by group authorities (e.g., the police) will be differentially salient to individuals based on their level of identification with the group the authority represents (Bradford et al., 2015; De Cremer & Tyler, 2005). Notably, this implies that identity moderates the relationship between procedural justice and legitimacy, cooperation, and compliance, as identity is regarded as being formed prior to the interaction with authorities (Antrobus et al., 2015). As such, GVM advances the idea that the extent to which someone identifies with a group authority will influence the relative strength of relational motivations, or procedural justice concerns, compared to more instrumental and self-interested motivations, or distributive justice concerns.

Taking a slightly different approach, the group engagement model (GEM; Blader & Tyler, 2009; Tyler & Blader, 2003) aims to further explicate how perceptions of fairness serve as antecedents to cooperation with justice officials. Importantly, and again borrowing heavily from SIT (Tajfel & Turner, 1979), the GEM postulates that group membership, or social identification, mediates the relationship between procedural justice and willingness to cooperate and comply (Tyler & Blader, 2003). This hypothesized relationship is a departure from that of the GVM, in that identity is predicted to be actively shaped by group authorities over the course of an interaction (Blader & Tyler, 2009) rather than previously formed. Importantly, this suggests that identity is “not fixed

but fluid and open to change across the life course” (Bradford et al., 2015, p. 177). Under this model, as opposed to the GVM, relational motivations are salient to the degree they confirm status and identity in the valued group. Otherwise, more instrumental motivations likely supplant those relational in nature.

Modern Applications of Procedural Justice

Prior to a discussion of contemporary procedural justice research, it is important to note that, while certainly less theoretically developed than procedural justice, there has been quite a bit of empirical attention on the role of distributive justice and its precursory function in the formation of justice and legitimacy attitudes (McLean, 2019; Reisig et al., 2007; Sunshine & Tyler, 2003; Tankebe, 2013; Tyler, 1990; Wolfe et al., 2015). Under a distributive justice framework, “legitimacy evaluations [are linked] to citizens’ assessments of whether the police allocate services and outcomes equally regardless of individual differences such as race or socioeconomic position” (McLean, 2019, p. 256). However, much of the modern empirical inquiry into the antecedents of justice judgments has focused on procedural justice, most notably Tyler’s (1990, 2003, 2006) social-psychological approach, termed the process-based model.

This model suggests that cooperation with legal authorities and compliance with laws are rooted in perceptions of legitimacy, which can be defined as the “belief that authorities, institutions, and social arrangements are appropriate, proper, and just” (Tyler, 2006, p. 376). Importantly, the focus of this model is on the normative and relational aspects of authority (Jackson & Sunshine, 2007; Sargeant et al., 2014; Sunshine & Tyler, 2003) – a focus that is most consistent with the GEM.

That is, all else being equal, legal authorities who act in ways that convey quality of treatment (e.g., dignity and respect) and quality of decision-making (e.g., neutrality, trustworthiness, allow for interactants to tell their side of the story) will inspire greater levels of legitimacy (Reisig et al., 2007; Tyler, 2001, 2005). These relational aspects communicate “important messages concerning social status, self-worth, and self-respect” (Tyler, 1997, p. 337). Considerable empirical evidence supports the notion that greater levels of legitimacy are related to an increased willingness to comply with laws and cooperate with legal authorities, such as the police (Bradford et al., 2014a; Murphy et al., 2008; Reisig et al., 2007; Sunshine & Tyler, 2003; Tankebe, 2014; Tyler & Jackson, 2014; Walters & Bolger, 2019). However, as noted above, in instances in which these relational motivations prove to be less salient owed to weak social bonds to and identification with the authority and the group they represent, instrumental, or distributive, concerns are likely to become more significant (Tyler, 1997).

Procedural justice has also been applied to other facets of the criminal justice system. For example, the process-based model has been tested and found support in corrections (Baker et al., 2021; Beijersbergen et al., 2015; Reisig & Meško, 2009; Tyler, 2010), courts (Alward & Baker, 2021; Kaiser & Holtfreter, 2016; Shook et al., 2021; Somers & Holtfreter, 2018), and even among authority figures who lack the ability to enforce the law (e.g., parents and teachers; Pickett et al., 2018; Trinkner & Cohn, 2014). However, with one exception using a student sample (see Flippin et al., 2019), there has been no effort to apply this framework to emergency call-taking. Call-takers represent a rather unique position in the criminal justice system, in that they have no ability to independently enforce the law yet are charged with the responsibility of mobilizing and

allocating police resources. Coupled with this are the misperceptions held by citizens of their level of resource ownership, creating an inherent system tension between callers and call-takers (i.e., customer service framework vs. public service framework). Considering the potential volatility of call-taker-caller interactions, as well as the potential for spill-over effects of procedural justice judgements of call-takers on police first responders, the role of procedural justice in this setting requires additional study.

Procedural Justice Spill-over

While procedural justice judgments have been examined within the confines of single encounters with legal authorities (e.g., citizen-police interactions, incarcerated individual-correctional officer interactions), less attention has been given to the potential for cross-encounter procedural justice judgement spill-over. This spill-over refers to the influence that perceptions of one authority figure's behavior have on perceptions of other downstream justice actors. Justice system actors rarely interact with citizens with clean slates. Perhaps Pickett and colleagues (2018) put it best when they noted that “researchers have commonly taken a narrow view of procedural justice perceptions, assuming at least implicitly that perceptions for different types of actors are independent and only reflect experiences with those specific actors” (p. 114). Rather, past interactions with not only criminal justice actors, but authority figures in general, may serve as a lens through which the actions of current and future actors will be perceived and judged, a notion that has been supported in legal socialization research (see e.g., Cavanagh et al., 2021; Tyler & Trinkner, 2018).

Of the research conducted to date, there exists consistent support for procedural judgement interdependence. In the earliest examination of spill-over, Casper et al. (1988) found that, for a sample of felony defendants whose cases resulted in a conviction, “aspects of police treatment (e.g., politeness and respect) spill[ed] over onto defendant evaluations of their experience with courtroom personnel and their general sense of fair treatment” (p. 498). Interestingly, other than sentence received, this was the strongest predictor of procedural justice judgements. These findings highlight the complexity with which justice judgements are formed, in that interactions do not take place in a vacuum. As Casper et al. noted, “such judgments are affected by attributes that defendants bring to their encounter with courts, by their experiences with police officers and attorneys, and by the severity of the outcome they receive” (p. 503).

Similarly, Baker and colleagues (2014) found that, among a sample of female offenders, perceptions of police honesty had a significant direct effect on perceptions of judge honesty. Moreover, perceived opportunities for voice during police interactions also had a significant direct effect on the perceived allowance for voice in courts as well as perceptions of procedural justice in the court. Importantly, perceptions of police procedural justice had the largest effect on perceptions of court procedural justice relative to other antecedents included in the study. Baker et al. concluded that their findings indicated the potential for police behavior to serve as a signal for justice-involved individuals about how fair or unfair the system is more broadly, thus jading their perceptions of downstream actors if their treatment early on is felt to be procedurally unjust.

Procedural justice spill-over has also been observed outside the United States. For example, Brown et al. (2018) found spill-over effects among a sample of sex offenders in Australia. Individuals in the sample who had more positive perceptions of the police in turn had more positive perceptions of the courts. Brown and colleagues conclude that, given the consistency of their findings internationally relative to the findings of studies of spill-over conducted in the United States (i.e., Baker et al., 2014; Casper et al., 1988), their findings speak to the universal experience of the spill-over effect, as well as “the important role that police officers play in society as gatekeepers to the [criminal justice system]” (p. 375).

Similar findings were shared by Alward and Baker (2021). Using a sample of justice-involved males, these authors found that participants who felt their experience with police was procedurally just, were significantly more likely to perceive their experiences in court as procedurally just too. Parsing this relationship out a bit further, Alward and Baker found that perceived police procedural justice and perceptions of police honesty had significant direct effects of perceptions of judge honesty, as well as perceptions of voice allowance during police encounters and perceived police procedural justice having a significant direct effect on perceptions of voice allowance in court.

Beyond the spill-over from police to courts, Tatar et al. (2012) found that incarcerated female juveniles who felt they were treated unjustly by court officials were more likely to hold negative perceptions of correctional staff, particularly as it related to safety from staff. Though, as the authors caution, these findings were only at a trend level and that length of incarceration moderated this relationship, with longer stints of incarceration resulting in a stronger association. Tatar and colleagues argue that this

finding may suggest that “participants who are incarcerated longer find similarities in the behavior of facility staff and court staff, and therefore transfer their feelings from one group to the other” (p. 286). Importantly, while a weak association relative to the previous studies, these findings demonstrate the potential for procedural justice judgement spill-over to extend beyond the courts and into corrections as well.

The studies reviewed thus far provided important insight into the spill-over phenomenon, though they are limited by their exclusive focus on justice-involved individuals. While “police officers are almost exclusively the first encounter for offenders entering the criminal justice system” (Baker et al., 2014, p. 159), this is not always the case for the general population, especially those who initiate their police encounter. For this group, call-takers likely represent their first contact with the criminal justice system (Gillooly, 2020, 2021; Leeney & Mueller-Johnson, 2012). Accordingly, prior spill-over studies may have placed too much emphasis on the gatekeeping role of the police, thus neglecting its meaning for call-takers. With evidence demonstrating “perceived past injustices do not diffuse like water under a bridge, bygones are not bygones, and time does not heal all wounds” (Tatar et al., 2012, p. 290), understanding the impact of procedural injustice doled out by call-takers is critical to better understanding the precursors to justice judgements and thus informing efforts to improve citizen-system relations. This is especially true considering evidence that dissatisfaction with citizen-initiated police contact has precipitously increased over the past thirty years – even more than dissatisfaction with police-initiated contacts (see Bradford et al., 2009).

The History of 911

While 911 call centers, otherwise known as Public Safety Answering Points (PSAPs), may feel ubiquitous to most United States citizens, the 911 system is a relatively new addition and is “one of the fastest-expanding components of the U.S. criminal justice system” (Neusteter et al., 2019, p. 3). Originally lobbied for by the International Association of Fire Chiefs (IAFC) as a single point for reporting fires in the late 1950s, 9-1-1 was not designated as an emergency number until 1968 (NENA, n.d.-b; Neusteter et al., 2019). Predating this system, different telephone numbers were used for various types of emergencies, making the system wildly cumbersome, especially with increases in the population and residential mobility. With the IAFC and other federal agencies and officials pushing for this shift to a single number, the President’s Commission on Law Enforcement and Administration of Justice issued their 1967 report, *The Challenge of Crime in a Free Society*, in which they state, “the telephone company should develop a single police number for each metropolitan area, and eventually for the entire United States” (U.S. President’s Commission on Law Enforcement and Administration of Justice, 1967, p. vi).

A year after the President’s Commission released their report, the American Telephone and Telegraph Company (AT&T) announced their designation of 9-1-1 as an emergency number (NENA, n.d.-b). And while the first 911 call was placed by Senator Rankin Fite in Haleyville, Alabama on February 16, 1968, just 35 days after AT&T’s announcement, it was not until 1973 that the White House’s Office of Telecommunications issued their support for the adoption of the 911 system (NENA, n.d.-b). With support from the White House came the creation of a Federal Information

Center, tasked with supporting agencies in the implementation of this system. The Public Safety Act of 1999 officially established 911 as the emergency number for the entire US (iCERT, 2016), with nearly 93% of the population having access to some type of 911 center thereafter, and growing to 96% present day (NENA, n.d.-b).

Since its inception, the 911 system has evolved considerably, largely owed to the development of Enhanced 911, or E911, as well as the integration of Computer Aided Dispatch (CAD) systems (Neusteter et al., 2019). However, limitations still exist. For example, cell phones muddy the ability of E911 to geographically locate emergencies with the necessary locational specificity. This is owed to cell phones being associated geographically with the closest cell phone tower rather than their actual location, something Next Generation 911 (NG911) hopes to address. In terms of personnel, due to the decentralized nature of the more than 6,000 PSAPs across the country, they often function independently, producing issues with consistency and standardization of call-taker training (Neusteter et al., 2019). Indeed, each PSAP is managed by a different entity, whether it be at a local or state level, and therefore each have their own requirements and educational expectations (911, n.d.). Though, the one unifying theme is the individual operating at the nucleus of this system – the call-taker.

However, to date, the call-taker's role has largely been neglected by researchers interested in police encounters. As Gillooly (2021) noted, “this absence reflects a tacit presumption that call-takers operate as agents of information transfer – that is, neutral conduits through which raw information is relayed from callers to the police” (p. 5). This assumption of neutrality lacks an appreciation for the impact of call-takers' behavior on the interactional experiences and outcomes of downstream justice actors.

The Function of Call-takers

Citizen-initiated police contacts account for nearly half of all police encounters, the lion's share of which originate from a citizen placing a call for service (Neusteter et al., 2019; Gillooly, 2021). These calls are typically broken down into five phases: the opening sequence, requests for help, the interrogative series, remedy and response, and closing (Zimmerman, 1984). At each step, call-takers are simultaneously responsible for gathering pertinent information, gauging the seriousness of the emergency, determining the need for fire, police, and/or medical services, and forwarding calls to dispatch as necessary (Lum et al., 2020; Neusteter et al., 2019; Tracy, 2002). These tasks are made more challenging by the obvious constraint inherent to call-taking—physical absence. 911 emergencies are uniquely characterized by “three-way disembodiment” (Wang, 2020) in that all parties—callers, call-takers, and police—are physically absent from one another in the beginning stages of their interaction. As such, uncertainty and ambiguity may arise if the proper language and effective methods of communication are not applied by both callers and call-takers. Importantly, the nuance of this discourse begins as soon as the call-taker picks up the line.

Research has demonstrated that the way a request for assistance is phrased impacts callers' ability to solicit help. Callers who convey a high level of entitlement are more likely to have their situation taken seriously by call-takers (Drew & Walker, 2010; Larsen, 2010, 2013; Raymond, 2014; Tracy, 1997; Whalen et al., 1988; Zimmerman, 1992). High entitlement requests tend to be formulated as statements of need, or explicit requests for emergency response (e.g., “I need police sent to the Wal-Mart on Main Street immediately”), while low entitlement requests are more passive in nature (e.g., “Would

somebody be able to send police to the Wal-Mart on Main Street?") (Kent & Antaki, 2020; Zimmerman, 1992). When callers communicate in ways displaying a greater entitlement, call-takers are more likely to orient their interrogative series (i.e., questions about the details of the incident, location, efforts to identify a resolution for the call; see Heritage & Clayman, 2010; Whalen & Zimmerman, 1987) towards dispatching services (e.g., asking for the location of the emergency) rather than first understanding if the call necessitates police services (e.g., asking more probing questions about the nature of the emergency) (Kent & Antaki, 2020; Larsen, 2010, 2013).

However, when caller entitlement fails to be affirmed by call-takers, hostility can arise (Svennevig, 2012). For callers, dialing 911 is a transaction. Most believe that their request ought to be answered with their desired response (Whalen et al., 1988). That is, their high entitlement appeal to "send the police" should not be questioned by a call-taker, as it is felt this communicates a clear need for assistance (Tracy, 1997). But call-takers are bound by their mandate. They must systematically gather information regardless of entitlement to appropriately allocate resources, an action that can be perceived as unnecessary or delaying help (Heritage & Clayman, 2010; Zimmerman, 1992). Furthermore, the interrogative series can be viewed by callers as call-takers doubting the validity of their emergency, posing the threat for negative affect (Tracy, 2002; Whalen & Zimmerman, 1990). This may result in callers growing annoyed with a perceived inadequacy in the call-taker's approach to responding to their emergency (Tracy & Tracy, 1998; Whalen et al., 1988), potentially leading to callers exhibiting a decreased willingness to cooperate (Svennevig, 2012).

Such hostility and noncompliance can have dire consequences, as resources may be delayed in being dispatched due to caller and call-taker acrimony (see Whalen et al., 1988). Additionally, police-citizen interactions can be made more adversarial owed to call-taker missteps. Namely, if call-takers fail to prepare the police appropriately (e.g., omit key incident details garnered from caller reporting, mischaracterized caller perceptions of the emergency, make incorrect intelligent jumps based on ambiguous caller reporting), or engage in verbal confrontations with the callers themselves, this can result in greater resistance once police arrive (Gillooly, 2020; Neusteter et al., 2019; Taylor, 2020). It is for these reasons that procedural justice may serve as an effective tactic for call-takers to employ.

Procedural (In)Justice in Call-taking

The process-based model posits that legal authorities who demonstrate respectful treatment, allow one to tell their side of the story (voice), neutrality, and trustworthy motivations inspire greater levels of legitimacy, which in turn increases the willingness to cooperate and comply (Bradford et al., 2014a; Tyler, 2003). These concepts, while typically applied to policing, are similarly pertinent to call-taking.

Respect

While respectful treatment is a core principle of procedural justice, call-taking presents a challenge to sustaining deferential behavior for both callers and call-takers. For these encounters, it can be difficult to balance the expediency required in call-taking with courteous treatment (Tracy, 2002). Indeed, two of the most common complaints lodged against call-takers are rude treatment and delayed response (Osher, 2013; Tracy & Eisenberg, 1990). These grievances are consistent with prior research, outlining the

potential slights or harm to esteem (Goffman, 1955, 1967) to occur over the course of an emergency call (Tracy & Tracy, 1998). While this may be unintentional, the emotionally charged nature of many 911 calls creates an environment replete with opportunities to lose tempers, both for callers and call-takers.

Voice

Research has demonstrated that voice or allowing citizens to tell their side of the story is critical to leaving citizens feeling as though they have been treated fairly. This tenant of procedural justice is complex when applied in the call-taking setting considering, unlike other legal authorities, 911 call-taking relies solely on verbal communication (Wang, 2020). A common practice in call-taking is “persistent repetition without variation” (Tracy, 2002, p. 139). That is, if a call-taker feels an incident-related query was not properly answered, they will reiterate their question, verbatim, repeatedly until a suitable response is given (Garcia, 2015). In doing so, a caller may feel that the call-taker is not listening, or the continued misunderstanding may prove to be frustrating. Additionally, continued questioning rather than signaled acceptance of what a caller is saying can contribute to callers feeling as though the call-taker is infringing upon their voice (Svennevig, 2012).

Neutrality

When interacting with justice officials, citizens largely expect that their decision-making will be fair and objective (Radburn & Stott, 2019). Citizens envisage actions and decisions to be grounded in facts and consistent with preestablished rules, rather than subjective or value laden in nature (Tyler, 2000). However, two potential obstacles likely inhibit call-takers’ ability to consistently communicate objectivity and impartiality.

First, the threshold for moving calls forward is a moving target, with recent evidence indicating the presence of statistically significant differences in call classifications across call-takers (Gillooly, 2021). That is, where one call-taker classifies a call as “high priority”, another may not. Some of this variation is thought to be owed to the variability in training. For incident types with greater definitional specificity during training (e.g., intimate partner violence), call-takers exhibit less variation in their decisions to classify calls (Gillooly, 2021). However, for calls with more subjective criteria given to call-takers to guide their decisions to move calls forward, greater variation is present. From the caller’s perspective, this potentially signals a “luck of the draw” mentality, in that your ability to mobilize a response may be dependent upon the call-taker you are assigned – suggesting a breakdown in perceived neutrality.

The second potential hurdle is related to emotionality in call-taking. When performing their mandate, call-takers routinely attempt to maintain emotional neutrality (Mann, 2004; Shuler & Sypher, 2000; Smith et al., 2019). Engaging in this form of emotional labor is said to “convey dispassionate authority and status” (Morris & Feldman, 1996, p. 991). However, as noted above, callers view call-taking through a customer service lens (Tracy, 1997). Espousing this framework likely fosters a desire for callers to be met with positive affirmations or empathy at the hands of the call-taker, particularly given the emotionally charged nature of many calls to 911. However, while customer service environments require “employees...to manufacture positive emotion, the emotional labor required of 911 dispatchers is the achievement of emotional neutrality” (Shuler & Sypher, 2000, p. 81). Callers may view their inability to appeal to the call-

taker's compassion or solicit verbal cues of expressive support as a severe form of neutrality – one that is more akin to apathy.

Trustworthy Motivations

The final aspect of procedural justice, trustworthy motivations, also bears discussion within the context of call-taking. Broadly speaking, trustworthiness is the culmination of judgements made by citizens regarding the degree to which a justice official is “benevolent and caring, is concerned about their situation and their concerns and needs, considers their arguments, tries to do what is right for them, and tries to be fair” (Tyler, 2000, p. 122). Importantly, a key antecedent of trust is justification (Murphy, 2017; Murphy & Tyler, 2017; Tyler, 2000). This refers to the effort made by an authority figure to articulate the reasoning behind their decisions. Critical to this process is recognizing the citizen's perspective, and clearly explaining the reasons for accommodating or rebuffing their case (Tyler, 2000).

For call-takers, there simply is not enough time. They must quickly respond to callers' proclaimed needs to prevent a delay in critical emergency services, or squander precious resources on a call better suited for a non-emergency line. However, callers tend to be unaware of the organizational constraints placed on call-takers. If their needs are left unmet, they will likely want an explanation, independent of the limited ability of call-takers to take the time to do so. This disjuncture creates the potential for callers to feel that their concerns were not heeded, leading to a sense of distrust in return. A lack of trust in the motivations of call-takers may be consequential for voluntary reporting of crime, an action that is integral to the ability of the police to effectively respond to crime (Bullock & Sindall, 2014; Gill et al., 2014; Terpstra, 2010).

Distributive Justice in Call-taking

While it has been demonstrated to this point that procedural justice concerns are relevant to call-taker-caller interactions, distributive concerns also bear discussion. As noted, distributive justice refers to judgements about the fairness of resource allocation (Tyler, 2000). When considering what instrumental concerns are contextually relevant to call-taking, it is worth considering what tends to characterize citizen grievances with call-takers – disrespectful treatment and delayed response (Osher, 2013; Tracy & Eisenberg, 1990). With the former being relational in nature given its relevance to determining the quality of treatment, a distinctly procedural concern (Tyler, 2001, 2005), attention turns to delayed response. Response time, defined as “the interval between a call for service and the arrival of policeman or unit at the scene of the incident” (Stevens et al., 1980, p. 212), has served as a critical determining factor of the effectiveness and quality of police services. Like the call-taker experience, police departments have placed value on rapid response time, in part, to meet citizens’ expectations and increase their satisfaction (Cihan et al., 2012; Eck & Rosenbaum, 1994).

This expectation for hasty response taps into a prominent aspect of distributive justice when viewed through the lens of a call-taker-citizen interaction – need. When calling 911, “caller[s] must demonstrate a justifiable need for the service, and communicate that need effectively to the call-taker” (Raymond, 2014, p. 36). Deutsch (1975) highlighted the significance of need when understanding the basis upon which fairness decisions are drawn, with resource allocation being perceived as fair to the extent outcomes are distributed proportional to the needs of the group. As a consequence, a fast response to a caller’s request may serve as an indication to callers that their needs were

deemed worthy of an accelerated mobilization of police resources, whereas a delayed response time may communicate the contrary. And with callers oftentimes espousing an entitlement to services (Tracy, 1997), swift provision of remedial services is likely the modal expectation, irrespective of the true merit of the request.

Essential to reducing response time is receiving accurate information from call-takers quickly. However, frequently in the literature related to response time, call-takers are singularly mentioned in the capacity that they are the channel through which police are “summoned” (Bratton & Malinowski, 2008). This further demonstrates the customer service framework espoused by callers with high levels of entitlement to police response (Kent & Antaki, 2020; Tracy, 1997; Zimmerman, 1992). Not only that, but it also reaffirms the tendency to overlook the role of call-takers in general (Gillooly, 2021), as well as their impact on the enhanced speed, or potential delay, in police service delivery. With response time seemingly serving as a key metric by which callers judge call-taker effectiveness, it would appear as though response time serves as an instrumental concern in callers’ determinations of distributive fairness in call-taking. Namely, shorter response times reflect distributive fairness, and longer response times reflect distributive injustice.

Current Focus

The lack of attention given to call-takers, both empirically and socially, demonstrates a clear need for additional research. Not only is research needed to explicate the role of the call-taker and adherence to procedural justice, but also to better understand how callers’ experiences translate to their treatment of police first responders in person and whether the police can overcome the harm of negative spill-over. This study aims to fill these gaps. The primary objective of this project is to better understand

the role of the call-taker and the potential spill-over effect of their behavior on police encounters, as well as what the police can do to correct the situation. To date, much of the call-taker related research completed to date have applied conversation analysis to case studies (Garcia, 2015; Garcia & Parmer, 1999; Svennevig, 2012; Whalen et al., 1988) or employed ethnographic approaches (Wang, 2020). This project offers an innovative mixed model design using a series of quasi-experimental manipulations embedded in a survey with a quasi-representative sample of U.S. adults. Specifically, this dissertation aims to answer three broad research questions:

1. Do the tenants of the group engagement model (GEM) apply to the call-taking context?
2. Do perceptions of unfair call-taker behavior make callers less willing to obey and cooperate with the police who arrive on the scene?
3. Can police tactics reverse the negative effect of poor treatment by call-takers as public encounters with callers unfold?

CHAPTER 3

DATA AND METHODS

This chapter details the data and methods used to test the research questions discussed in Chapter 2. First, an overview of the data will be provided, including the procedures used to solicit participation in the survey and the structure of the survey instrument. Next, the experimental stimuli and measures used in this study will be described. Lastly, this chapter will conclude with a discussion of the analytic strategy adopted in the present study.

Procedures

This study aims to extend the work by Flippin and colleagues (2019) through a more direct examination of the spill-over effect in a 911 call-taker/policing context. To do so, factorial vignettes were developed and administered using a mixed model design to an online panel provided by Prolific Academic, a crowdsourcing platform launched in 2014 known for participant honesty, naivety, and diversity relative to other platforms, such as MTurk (Pe'er et al., 2017; Pe'er et al., 2021). The decision to use factorial vignettes was based on their rather ubiquitous use when testing the effects of procedural justice in legal (see, e.g., Atzmüller & Steiner, 2010; Barkworth & Murphy, 2015; Brown & Reisig, 2019; Flippin et al., 2019; Lowrey et al., 2016; Maguire et al., 2017; Reisig et al., 2018) and non-legal actor domains (Trinkner & Cohn, 2014). Importantly, the vignette depicting a 911 call was created and loosely derived from actual 911 transcripts found online (see Burke, 2020; USA Today, 2020) and in consultation with a former 911 call-taker. As for the vignette depicting a police response, transcripts from police-citizen interactions were used to develop these hypothetical responses (see Thomas, 2021).

Surveys were developed using Qualtrics software and later uploaded to the Prolific platform. Participants accessed the Qualtrics survey link through their Prolific Academic account, and then were rerouted back to Prolific Academic upon completing the survey. This approach allowed the investigator to obtain a quasi-representative sample of U.S. adults in terms of sex, age, and ethnicity. To do so, Prolific’s internal system sets a goal for each category as determined by Prolific’s matching data (see Table 1). Prolific then stratifies the desired sample size, in this case 1,500 participants, across these three demographic characteristics based upon the US Census estimates from 2015 (Prolific, 2022a, 2022b). To qualify for selection, participants must be residents of the country the researcher is seeking a quasi-representative sample of, as well as fluent in the language of that country.

Table 1
Prolific’s Quasi-Representative Sample Matching

Characteristics	Matching Achieved (N = 1,501)	Matching Goal (N = 1,500)
	Frequency (%)	Frequency (%)
Sex		
Female	770 (51%)	769 (51%)
Male	731 (49)	731 (49)
Age		
18-27	293 (20)	268 (18)
28-37	285 (19)	263 (18)
38-47	245 (16)	244 (16)
48-57	255 (17)	258 (17)
58+	423 (28)	467 (31)
Ethnicity		
Asian	96 (6)	96 (6)
Black	197 (13)	197 (13)
Mixed	37 (2)	37 (2)
Other	30 (2)	30 (2)
White	1,141 (76)	1,140 (76)

After obtaining the data from Prolific, various data cleaning efforts resulted in 5.40% (n = 81) of the sample being dropped. Namely, participants who reported not being honest or careful in their responses (n = 2), failed narrative checks related to indicating the justice official depicted in each vignette (n = 1), incorrectly responded to attention checks² (n = 12), failed to respond at least one outcome measures (n = 54), or reported not being fluent in English or not being a resident of the United States (n = 6) were dropped. Additionally, participants who did not respond to the honesty and carefulness measure, narrative checks, attention checks, or measures related to ensuring quasi-representativeness of the US (i.e., fluent in English and a resident of the United States) were dropped from the final sample (n = 6), resulting in a final sample size of 1,420 participants (see Table 2). Participants were paid for their contributions in accordance with the recommended compensation practices detailed by Prolific. Importantly, Arizona State University's institutional review board approved this protocol prior to beginning data collection.

² To screen out participants who may move through the survey in a reckless manner, two attention checks were included in the body of the survey (e.g., "Please select 'Strongly Disagree' from the answer choices for this question."). While there is some debate regarding the use of this method of quality assurance, with some arguing against their use out of concerns of introducing social desirability biases, or biases against certain demographic cohorts (see, e.g., Anduiza & Galais, 2017; Clifford & Jerit, 2015; Hauser & Schwarz, 2015), others have deemed these measures as appropriate tools for detecting satisficing without compromising scale validity (see, e.g., Kung et al., 2018; Oppenheimer et al., 2009). To account for some of these issues, this study also asked participants to report how honest they were in answering questions, as well as how carefully they read the questions. These kinds of "seriousness checks" have proven beneficial in improving data validity in the past (Aust et al., 2013).

Table 2
Sample Characteristics

	Frequency	Percentage
Gender		
Men	678	47.75
Women	714	50.28
Non-binary/third gender	24	1.69
Prefer not to say	4	0.28
Age		
19-27	254	17.90
28-37	276	19.45
38-47	237	16.70
48-57	236	16.63
58+	416	29.32
Race		
American Indian or Alaskan Native	10	0.70
Asian	86	6.06
Black or African American	174	12.25
Native Hawaiian or Other Pacific Islander	1	0.07
White	1,080	76.06
Other	10	0.70
Mixed	48	3.38
Prefer not to say	11	0.77
Ethnicity		
Not of Hispanic, Latino/a/x, or Spanish origin	1,324	93.44
Yes, of Hispanic, Latino/a/x, or Spanish origin	87	6.14
Prefer not to say	6	0.42
Education		
Less than high school	18	1.27
High school equivalent diploma	179	12.63
Some college	309	21.81
Associate degree	135	9.53
Bachelor's degree	536	37.83
Master's, professional, or doctorate degree	240	16.94
Marital status		
Never married	464	32.70
Not married, but in long-term relationship	221	15.57
Married	533	37.56
Divorced	169	11.91
Widowed	32	2.26
Yearly income		
Less than \$15,000	293	20.68
\$15,000 - \$34,999	308	21.74
\$35,000 - \$49,999	214	15.10
\$50,000 - \$74,999	273	19.27
\$75,000 or more	329	23.22
Occupation Classification		
Unemployed	481	33.87
Low-skilled manual labor	159	11.20
High-skilled manual labor	106	7.46
Professional labor	674	47.46

To ensure randomization was achieved, balance tests were conducted using chi-square tests (see Table B1 in Appendix B). In total, of the 36 balance tests conducted, only one test indicated a statistically significant difference between groups (i.e., participant ethnicity and assignment to either a procedurally just or procedurally unjust police officer). Though, this finding was determined to be spurious in nature and thus did not rise to the level of warranting any post hoc adjustments (see Mutz et al., 2019).

Survey Instrument

The survey was structured in such a way that the factorial vignettes were presented after participants responded to several closed-ended survey items that captured trait-based emotions (i.e., anger and depression) and personality characteristics (e.g., impulsivity and risk-taking tolerance). These emotions and personality items were not used in this specific study. After responding to these items, participants read a 911 call-taker vignette and responded to a series of closed-ended items. Next, participants were administered a police response vignette and asked to complete a second set of closed-ended items. Importantly, this structure adopts a mixed model design, in that features of both a between-subjects design and a within-subjects design are employed.

Following each vignette, participants were presented with two quality assurance items (i.e., “How realistic was the short story?”; “How clearly could you imagine the short story?”). Capturing this information is important given the need for vignettes to be credible and relatable for participants (Barter & Renold, 1999; Bryman et al., 2012; Finch, 1987; Hughes, 1998). Broadly speaking, participants found the vignettes to be largely realistic and easily imaginable. For the call-taker vignette, 82.04% (n = 1,165) of participants reported that the short story was either very realistic or somewhat realistic

and 98.17% (n = 1,392) reported they could either very clearly or somewhat clearly imagine the short story. As for the police officer vignette, 85.20% (n = 1,209) of participants reported that the short story was either very realistic or somewhat realistic and 98.80% (n = 1,402) reported they could either very clearly or somewhat clearly imagine the short story.

Participants were also asked to report their emotional response after reading each vignette (e.g., “How did the call-taker make you feel?”) by selecting as many emotions from the response set that they felt applied (e.g., angry, fearful, calm, and depressed). However, these state-based emotion items will not be used in the current study. The last section of the survey consisted of items that were used to present participants with narrative checks (e.g., “In the first short story you read, who did you interact with?”; “In the second short story you read, why were the police called?”), construct a social desirability scale (Stöber, 1999, 2001), and gather a host of demographic information (e.g., formal education, household income, and length of residence). The survey instrument is provided in Appendix A.

Experimental Stimuli

Each participant responded to a survey with two vignettes, one depicting an interaction with a 911 call-taker and the other involving the resulting police response. Each vignette varied the behavior of both legal authorities (i.e., procedurally just or procedurally unjust) and the projected and actual response time (i.e., distributively just or distributively unjust). Accordingly, this study employed a mixed model, 2 (procedural injustice) x 2 (distributive justice) x 2 (call-taker or police vignette) between- and within-subjects design, where the procedural and distributive justice manipulations are between-

subject factors (i.e., participants only received one version of the vignettes) and the vignette type is a within-subject factor (i.e., each participant received a vignette for the call-taker and a vignette for the police). The first experimental manipulation involved manipulating the behavior of the call-taker and the police officer in their respective vignettes. For example, in the call-taker vignette, in response to the caller's report of what has transpired, the call-taker either responds in a calming tone, saying, "Okay, I will send a patrol car your way to check on him. Do you have any immediate concerns about your safety?" (control condition), or in a sarcastic tone, saying, "And what exactly do you want us to do about that?" (experimental condition). Further, when the caller reiterates their request for assistance, the call-taker responds by saying "I completely understand. Please stay on the line with me until police arrive" (control condition) or cuts the caller and says "Yeah, yeah, yeah, someone is on their way. Just tell them when they get there. Don't hang up until then. Understand?" (experimental condition). The call-taker vignette and experimental/control conditions appeared as follows:

As you are leaving a public park, you notice someone sitting in a white Honda in the parking lot, slumped over the wheel. You walk over and knock on their window to check on them. They wake up and look at you. You ask if they're okay and whether they need help, but they rest their head against the steering wheel and close their eyes. Out of a concern for their health and safety, as well as the potential for them to drive while impaired, you call 911. Upon answering, the call-taker asks you what's going on. You answer by saying "I have a guy sitting in a car. I think he may be intoxicated. He's parked in the parking lot slumped over the steering wheel. I tried to wake him up, but I don't know what's wrong with

him.” The call-taker asks for the driver’s basic demographic information, which you describe. After detailing the situation, the call-taker responds *in a calming tone and says, “Okay, I will send a patrol car your way to check on him. Do you have any immediate concerns about your safety?”* (procedural injustice control condition) | *in a sarcastic tone and says, “And what exactly do you want us to do about that?”* (procedural injustice experimental condition). You say that you’re just worried and want the police to come check on him and determine if he is okay to drive. *The call-taker responds by saying, “I completely understand. Please stay on the line with me until police arrive”* (procedural injustice control condition) | *However, the call-taker cuts you off and says, “Yeah, yeah, yeah, someone is on their way. Just tell them when they get there. Don’t hang up until then. Understand?”* (procedural injustice experimental condition). You ask how long it will take the police to arrive. The call-taker says, *“they should be there in few minutes”* (distributive justice control condition) | *“I don’t know”* (distributive justice experimental condition).

In the vignette that followed the call-taker short story, the behavior of the police officer was varied, with procedurally just conduct demonstrating an attempt by the officer to “clean up” the spill-over caused by call-taker malfeasance. That is, in response to the citizen’s retelling of what caused them to request police assistance, the officer either responds by saying “Yeah, I get that. I think you did the right thing in calling us. I’ll go see if I can chat with him.” (control condition), or by saying “Right. See, I’m already having a bad day, so I really don’t feel like dealing with this petty shit. But I’ll go see if I can talk to the guy.” (experimental condition). Afterwards, the officer either responds to

the citizen's query about their need to stick around by saying "Can you please hang around for a few minutes? I may have some more questions. Either way, thank you for doing your part." (control condition) or scoffs and interrupts the citizen by saying "I think we can handle it from here. That's why you called us, right? But you need to hang around. I may need to talk to you again." (experimental condition). The vignette involving the police encounter and the experimental/control conditions was as follows:

After a few minutes (distributive justice control condition) / *45 minutes* (distributive justice experimental condition), the police arrive. You walk over to explain the situation. You point to the white Honda the man is sitting in and explain that you are concerned for his wellbeing, as well as whether he is fit to drive. The officer responds by saying, "Understood. Were you able to talk to him at all?" You tell the officer that you knocked on his window and attempted to talk to him but that he dozed off again. You reiterate that you are unsure whether he is drunk or needs medical attention. The officer responds by saying "*Yeah, I get that. I think you did the right thing in calling us. I'll go see if I can chat with him*" (procedural justice control condition) | "*Right. See, I'm already having a bad day, so I really don't feel like dealing with this petty shit. But I'll go see if I can talk to the guy*" (procedural justice experimental condition). You say thank you and ask if the officer wants you to stick around. *The officer says, "Can you please hang around for a few minutes? I may have some more questions. Either way, thank you for doing your part"* (procedural justice control condition) / *The officer scoffs and interrupts you by saying "I think we can handle it from here. That's why you*

called us, right? But you need to hang around. I may need to talk to you again”
(procedural justice experimental condition).

Call-taker procedural injustice is binary coded and reflects whether participants received the procedurally unfair treatment (1 = yes, 0 = no). *Police officer procedural justice* is also binary coded and reflects whether participants received the procedurally fair treatment (1=yes, 0=no). Importantly, these manipulations present violations of two of the key principles of procedural justice – voice and respect. Neutrality and trustworthy motivations, however, were not directly manipulated in the vignettes. This was primarily due to the limitations of altering the sequential procedure inherent to call-taking, where voice and respect are the most salient precepts. As such, manipulating neutrality and trustworthy motivations would put the vignettes at risk of being unrealistic or unclear, thus jeopardizing internal validity. However, to ensure participants correctly perceived the fairness in treatment by the call-takers and police, ANOVA models were estimated using procedural justice manipulation checks (see Table 3). Such models were estimated across four survey items, each capturing a different element of procedural justice (e.g., “The call-taker/police officer in the short story treated me with dignity and respect”). Participants were asked to express their level of agreement with each prompt, ranging from “strongly disagree” (coded 1) to “strongly agree” (coded 4). These manipulation checks were administered after both the call-taker vignette and police officer vignette. This approach allows for a comparison of mean scores between participants who received the experimental and control conditions (see Flippin et al., 2019; Brown & Reisig, 2019).

The results of the one-way ANOVA models indicated that there were statistically significant differences in the mean between participants who received the procedurally

just response and those who received the procedurally unjust response from both call-takers and police officers across each procedural justice scale item. This demonstrates that participants correctly perceived the manipulations as intended, even in the absence of direct manipulations to neutrality and trustworthy motivations.

Table 3
One-way ANOVA Models Testing Procedural (In)Justice Manipulations (N = 1,420)

	Dignity and Respect		Voice		Neutrality		Trustworthy Motivations	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Call-taker Vignette								
Procedural Injustice								
Yes	1.31	0.60	2.28	0.86	1.44	0.67	1.29	0.56
No	3.60	0.56	3.67	0.53	3.53	0.62	3.42	0.68
	<i>F</i> 5,451.66***		1,352.41***		3,716.12***		4,151.01***	
Police Officer Vignette								
Procedural Justice								
Yes	3.70	0.51	3.73	0.47	3.61	0.57	3.15	0.72
No	1.32	0.60	2.14	0.89	1.38	0.63	1.27	0.51
	<i>F</i> 6,489.26***		1,772.69***		4,881.13***		3,244.66***	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The second manipulation, *distributive justice*, involved the response time of the police. Response time is a primary instrumental consideration among 911 callers, with shorter response times demonstrating greater distributive fairness and longer response times demonstrating greater distributive unfairness. For example, in the call-taker vignette, in response to the caller’s query regarding the length of time it will take the police to arrive, the call-taker either responds by saying, “they should be there in a few minutes” (experimental condition) or “I don’t know” (control condition). The latter response denotes a level of ambiguity likely to be perceived as frustrating for callers, in that their expectations of a speedy response may not be met. As for the response time manipulation in the police officer vignette, participants either received a vignette depicting a scenario in which the police responded “after a few minutes” (experimental condition) or “45 minutes” (control condition).

Distributive justice is binary coded and reflects if a participant received the distributively-fair treatment (1 = yes, 0 = no). Similar to the procedural justice manipulation, ANOVA models were conducted to ensure participants correctly perceived the outcome doled out by the call-takers and police officers as fair when they were recipients of the distributive justice stimuli using distributive justice manipulation checks after each vignette (see Table 4). These manipulation checks asked participants to reflect upon the appropriateness and reasonableness of the response time estimated by the call-taker (i.e., “The response time estimated by the call-taker in the short story for a police officer to arrive on scene was appropriate?”; “The response time estimated by the call-taker in the short story for a police officer to arrive on scene was reasonable?”), as well as the actual response time of the officer (i.e., “The response time of the police officer in the short story to arrive on scene was appropriate?”; “The response time of the police officer in the short story to arrive on scene was reasonable?”). Participants were asked to express their level of agreement with each prompt, ranging from “strongly disagree” (coded 1) to “strongly agree” (coded 4), again allowing for a comparison of mean scores between participants who received the experimental and control conditions. Once again, the results of the one-way ANOVA models indicated that there were statistically significant differences in the mean between participants who received the distributively just response and those who received the distributively unjust response from both call-takers and police officers across both distributive justice scale item. This demonstrates that participants correctly perceived the distributive justice manipulations as intended.

Table 4
One-way ANOVA Models Testing Distributive Justice Manipulations (N = 1,420)

	Response Time Appropriate		Response Time Reasonable	
	Mean	SD	Mean	SD
Call-taker Vignette				
Distributive Justice				
Yes	3.29	0.76	3.33	0.72
No	1.71	0.83	1.72	0.83
<i>F</i>	1,399.64 ***		1,525.59***	
Police Officer Vignette				
Distributive Justice				
Yes	3.26	0.80	3.28	0.77
No	1.83	0.93	1.83	0.95
<i>F</i>	962.83***		1,005.30***	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Measures

Legitimacy

Call-taker and police officer legitimacy were operationalized using items that reflect three key components of legitimacy: normative obligation to obey, institutional trust, and normative alignment (Tyler & Jackson, 2014). Normative obligation to obey the call-taker/police officer, or the felt compulsion to obey because it is the right thing to do, was measured using three items: “I have a moral responsibility to accept the decisions of the call-taker/police officer in the short story, even if I think they are wrong”, “I would do what the call-taker/police officer in the short story tells me to do because it is the right thing to do”, and “I would feel a moral duty to do what the call-taker/police officer in the short story tells me to do, even if I did not like the way they talked to me.” For the call-taker vignette, these items demonstrated a very good level of internal consistency (Cronbach’s $\alpha = 0.81$, mean inter-item $r = 0.58$; see Table 5), and loaded onto a single component (eigenvalue = 1.62, loadings > 0.60) upon the completion of a principal components analysis (PCA; see Table C1 in Appendix C). For the police officer vignette, these items also indicated a very good level of internal consistency (Cronbach’s $\alpha = 0.88$,

mean inter-item $r = 0.72$; see Table 6) and similarly loaded onto a single component (eigenvalue = 2.04, loadings > 0.75 ; see Table C2 in Appendix C). The items were then summed and averaged to create two scales: *normative obligation to obey the call-taker* ($M = 2.88$, $SD = 0.76$) and *normative obligation to obey the police officer* ($M = 2.87$, $SD = 0.88$).

Both institutional trust scales—one for call-takers and one for the police—were also measured using three items: “I think the call-taker/police officer in the short story is trustworthy”, “I trust the call-taker/police officer in the short story to make the right decisions”, and “I trust the intentions of the call-taker/police officer in the short story.” For the call-taker vignette, these items indicated strong internal consistency (Cronbach’s $\alpha = 0.94$, mean inter-item $r = 0.85$). These items loaded onto a single component (eigenvalue = 2.48, loadings > 0.85). Similarly, the police officer vignette items demonstrated high internal consistency (Cronbach’s $\alpha = 0.97$, mean inter-item $r = 0.91$), and the items loaded onto a single component (eigenvalue = 2.69, loadings > 0.90). The items were then summed and averaged to create two variables: *institutional trust in the call-taker* ($M = 2.63$, $SD = 1.05$) and an *institutional trust in the police officer* ($M = 2.61$, $SD = 1.12$).

Lastly, normative alignment with the call-taker and the police officer refers to the extent to which the police and individuals are perceived to share the same values. These two scales were operationalized using three items: “I think the call-taker/police officer in the short story has similar values as myself”, “I think the call-taker/police officer in the short story acted in a way that is consistent with my own ideas about what is right and wrong”, and “I think the call-taker/police officer in the short story would stand up for

values that are important to me.” For the call-taker vignette, these items demonstrated excellent internal consistency (Cronbach’s $\alpha = 0.94$, mean inter-item $r = 0.84$), and the items loaded onto a single component (eigenvalue = 2.44, loadings > 0.85). Similarly, the police officer vignette items demonstrated high internal consistency (Cronbach’s $\alpha = 0.96$, mean inter-item $r = 0.89$), and the items loaded onto a single component (eigenvalue = 2.63, loadings > 0.90). The items were then summed and averaged to create two measures—*normative alignment with the call-taker* ($M = 2.35$, $SD = 1.03$) and a *normative alignment with the police officer* ($M = 2.42$, $SD = 1.14$).

All survey items used to operationalize the three component parts of legitimacy featured Likert-style response sets, ranging from “strongly disagree” (coded 1) to “strongly agree” (coded 4). Each item was coded so that higher scores captured a greater sense of obligation to obey, stronger feelings of trust, and a greater sense of mutual alignment. The three legitimacy subscales (i.e., normative obligation to obey, institutional trust, and normative alignment) were then used to estimate a PCA model for both call-taker and police officer legitimacy. Using the K1 rule, the police officer legitimacy subscales loaded onto a single component (eigenvalue = 2.29, loadings > 0.65) and demonstrated excellent internal consistency (Cronbach’s $\alpha = 0.90$, mean inter-item $r = 0.75$). Similarly, the call-taker legitimacy subscales loaded onto a single factor (eigenvalue = 1.94, loadings > 0.45) and indicated very good internal consistency (Cronbach’s $\alpha = 0.82$, mean inter-item $r = 0.60$). The legitimacy scales were constructed by summing and taking the mean score of the scales for each justice actor, creating a *call-taker legitimacy* ($M = 2.62$, $SD = 0.82$) and *police legitimacy* ($M = 2.64$, $SD = 0.96$).

Willingness to Cooperate

Willingness to cooperate was measured using several items loosely derived from items commonly used in prior research (see, e.g., Murphy et al., 2015; Reisig et al., 2007; White et al., 2016), and was operationalized in both the short and long term—immediate cooperation and future cooperation. The response sets for each of the cooperation survey items—for both call-takers and the police—featured response sets that ranged from “not at all willing” (coded 1) to “very willing” (coded 4). These items were coded so that higher scores reflected a greater willingness to cooperate with authorities.

After the call-taker vignette, participants were asked to gauge their willingness to continue cooperating with the call-taker, termed *immediate cooperation with call-taker*. This scale consisted of three items: “How willing would you be to remain on the line with the call-taker in the short story?”, “How willing would you be to answer additional questions from the call-taker in the short story?”, and “How willing would you be to do what the call-taker in the short story asks you to do while waiting for the police?” This scale exhibited high internal consistency (Cronbach’s $\alpha = 0.90$, mean inter-item $r = 0.74$). The items loaded onto a single component (eigenvalue = 2.14, loadings > 0.80). The items were then summed and averaged ($M = 3.24$, $SD = 0.78$).

Participants were also asked to assess their willingness to cooperate with the call-taker in the future, termed *future cooperation with call-taker*. Similar to the items capturing immediate cooperation, future cooperation was measured using three items: “How willing would you be to call 911 in the future if something like this situation happened to you again?”, “How willing would you be to call 911 in the future if you were to witness a serious (felony) crime?”, and “How willing would you be to call 911 in the

future if you were to witness a minor (misdemeanor) crime?” Once again, the scale was characterized by high levels of internal consistency (Cronbach’s $\alpha = 0.83$, mean inter-item $r = 0.62$), and the items loaded onto a single component (eigenvalue = 1.73, loadings > 0.65). The items were then summed and averaged ($M = 3.28$, $SD = 0.73$).

Participants were also asked about their willingness to cooperate with police first responders, termed *anticipated cooperation with police*. This was measured using three items: “How willing would you be to provide a witness statement to the police officer who arrives on the scene?”, “How willing would you be to stick around at the scene if the police officer who arrives asked you to do so voluntarily?”, and “How willing would you be to do what the police officer who arrives on the scene asks you to do?” This scale demonstrated very good internal consistency (Cronbach’s $\alpha = 0.89$, mean inter-item $r = 0.73$), and the three items loaded onto a single component (eigenvalue = 2.07, loadings > 0.80). The items were then summed and averaged ($M = 3.44$, $SD = 0.65$). Importantly, this last measure allows for a comparison of willingness to cooperate with police before and after police officers arrive, thus providing a better understanding of how the sequential ordering of procedurally (un)just treatment may impact voluntary cooperation.

After reading the second vignette (i.e., the police response scenario), participants were asked to respond to questions meant to assess their willingness to remain cooperative with police, termed *immediate cooperation with police*, which was measured using three items: “How willing would you be to do what the police officer asks you to do?”, “How willing would you be to stick around at the scene if the police officer asked you to do so voluntarily?”, and “How willing would you be to provide a witness statement to the police officer?” This three-item scale demonstrated very good internal

consistency (Cronbach's $\alpha = 0.93$, mean inter-item $r = 0.83$). When entered into a PCA, the three items loaded onto a single component (eigenvalue = 2.40, loadings > 0.85). The items were then summed and averaged ($M = 3.17$, $SD = 0.85$).

Participants were also asked to gauge their willingness to cooperate with the police in the future, termed *future cooperation with police*. This was measured using three items: "How willing would you be to identify a suspect if asked by the police to do so in the future?", "How willing would you be to report a crime to the police in the future?", and "How willing would you be to assist with a police investigation in the future?" This scale also demonstrated very good internal consistency (Cronbach's $\alpha = 0.94$, mean inter-item $r = 0.85$). The PCA showed that the three items loaded onto a single component (eigenvalue = 2.47, loadings > 0.90). The items were then summed and averaged ($M = 3.12$, $SD = 0.87$).

Social Identity

Social identity was also of interest to this study, largely owed to the potential mediating role of social identity in the effect of procedural justice on legitimacy and cooperation with justice officials (Bradford et al., 2014b). Identity was measured using three items loosely derived from past research (see, e.g., Bradford et al., 2015) and adapted for this study: "The interaction in the short story made me feel like a valued member of my community", "The interaction in the short story made me feel like an honest, law-abiding citizen", and "The interaction in the short story made me feel proud to be a part of my community." Similar to the other measures, the social identity items were administered after both the call-taker vignette and police officer vignette. These items featured Likert-style response sets, ranging from "strongly disagree" (coded 1) to

“strongly agree” (coded 4). The coding was such that higher scores corresponded to stronger sense of social identity. The call-taker social identity scale demonstrated very good internal consistency (Cronbach’s $\alpha = 0.91$, mean inter-item $r = 0.77$), and the items loaded onto a single component (eigenvalue = 2.25, loadings > 0.75). The internal consistency of the police social identity scale was very good (Cronbach’s $\alpha = 0.94$, mean inter-item $r = 0.85$). When entered into a PCA, the three items loaded onto a single component (eigenvalue = 2.52, loadings > 0.80). The items were then summed and averaged to create two scales: *call-taker social identity* ($M = 2.61$, $SD = 0.93$) and *police officer social identity* ($M = 2.61$, $SD = 1.07$).

Table 5
Descriptive Statistics for Scales and Items for Call-taker Vignette

Scales and items	Mean	SD
<i>Normative Obligation to Obey the Call-taker</i>		
1. I have a moral responsibility to accept the decisions of the call-taker in the short story, even if I think they are wrong	2.54	0.93
2. I would do what the call-taker in the short story tells me to because it is the right thing to do.	3.09	0.87
3. I would feel a moral duty to do what the call-taker in the short story tells me to do, even if I did not like the way they talked to me.	3.01	0.90
	Cronbach’s alpha =	0.81
	Mean inter-item $r =$	0.58
	Mean item-total $r =$	0.65
<i>Institutional Trust of Call-taker</i>		
4. I think the call-taker in the short story is trustworthy.	2.61	1.09
5. I trust the call-taker in the short story to make the right decisions.	2.64	1.10
6. I trust the intentions of the call-taker in the short story.	2.65	1.12
	Cronbach’s alpha =	0.94
	Mean inter-item $r =$	0.85
	Mean item-total $r =$	0.88
<i>Normative Alignment with Call-taker</i>		
7. I think the call-taker in the short story has similar values as myself.	2.27	1.06
8. I think the call-taker in the short story acted in a way that is consistent with my own ideas about what is right and wrong.	2.44	1.20
9. I think the call-taker in the short story would stand up for values that are important to me.	2.35	1.02
	Cronbach’s alpha =	0.94
	Mean inter-item $r =$	0.84
	Mean item-total $r =$	0.87
<i>Immediate Cooperation with Call-taker^b</i>		
10. How willing would you be to remain on the line with the call-taker in the short story?	3.21	0.90

11. How willing would you be to answer additional questions from the call-taker in the short story?	3.30	0.85		
12. How willing would you be to do what the call-taker in the short story asks you to do while waiting for the police?	3.22	0.81		
			Cronbach's alpha =	0.90
			Mean inter-item r =	0.74
			Mean item-total r =	0.80
<i>Future Cooperation with Call-taker^b</i>				
13. How willing would you be to call 911 in the future if something like this situation happened to you again?	3.22	0.91		
14. How willing would you be to call 911 in the future if you were to witness a serious (felony) crime?	3.61	0.69		
15. How willing would you be to call 911 in the future if you were to witness a minor (misdemeanor) crime?	3.00	0.93		
			Cronbach's alpha =	0.83
			Mean inter-item r =	0.62
			Mean item-total r =	0.69
<i>Anticipated Cooperation with Police^b</i>				
16. How willing would you be to provide a witness statement to the police officer who arrives on the scene?	3.49	0.71		
17. How willing would you be to stick around at the scene if the police officer who arrives asked you to do so voluntarily?	3.35	0.77		
18. How willing would you be to do what the police officer who arrives on the scene asks you to do?	3.47	0.68		
			Cronbach's alpha =	0.89
			Mean inter-item r =	0.73
			Mean item-total r =	0.78
<i>Call-taker Social Identity^a</i>				
19. The interaction in the short story made me feel like a valued member of my community.	2.46	1.05		
20. The interaction in the short story made me feel like an honest, law-abiding citizen.	2.90	0.97		
21. The interaction in the short story made me feel proud to be a part of my community.	2.46	1.01		
			Cronbach's alpha =	0.91
			Mean inter-item r =	0.77
			Mean item-total r =	0.82

^a Response set ranges from 1 = strongly disagree to 4 = strongly agree

^b Response set ranges from 1 = not at all willing to 4 = very willing

^c Response set ranges from 1 = very dissatisfied to 4 = very satisfied

Note. Items presented in this table are standardized.

Table 6*Descriptive Statistics for Scales and Items for Police Officer Vignette*

Scales and items	Mean	SD
<i>Normative Obligation to Obey the Police^a</i>		
1. I have a moral responsibility to accept the decisions of the police officer in the short story, even if I think they are wrong.	2.63	1.01
2. I would do what the police officer in the short story tells me to do because it is the right thing to do.	3.08	0.94
3. I would feel a moral duty to do what the police officer in the short story tells me to do, even if I did not like the way they talked to me.	2.91	1.00
Cronbach's alpha =		0.88
Mean inter-item r =		0.72
Mean item-total r =		0.77
<i>Institutional Trust of Police^a</i>		
4. I think the police officer in the short story is trustworthy.	2.61	1.15
5. I trust the police officer in the short story to make the right decisions.	2.62	1.14
6. I trust the intentions of the police officer in the short story.	2.61	1.17
Cronbach's alpha =		0.97
Mean inter-item r =		0.91
Mean item-total r =		0.93
<i>Normative Alignment with Police^a</i>		
7. I think the police officer in the short story has similar values as myself.	2.35	1.15
8. I think the police officer in the short story acted in a way that is consistent with my own ideas about what is right and wrong.	2.48	1.25
9. I think the police officer in the short story would stand up for values that are important to me.	2.44	1.14
Cronbach's alpha =		0.96
Mean inter-item r =		0.89
Mean item-total r =		0.92
<i>Immediate Cooperation with Police^b</i>		
10. How willing would you be to do what the police officer asks you to do?	3.12	0.89
11. How willing would you be to stick around at the scene if the police officer asked you to do so voluntarily?	3.13	0.95
12. How willing would you be to provide a witness statement to the police officer?	3.26	0.88
Cronbach's alpha =		0.93
Mean inter-item r =		0.83
Mean item-total r =		0.86
<i>Future Cooperation with Police^b</i>		
13. How willing would you be to identify a suspect if asked by the police to do so in the future?	3.14	0.89
14. How willing would you be to report a crime to the police in the future?	3.17	0.92
15. How willing would you be to assist with a police investigation in the future?	3.05	0.94
Cronbach's alpha =		0.94
Mean inter-item r =		0.85
Mean item-total r =		0.88
<i>Police Social Identity^a</i>		
16. The interaction in the short story made me feel like a valued member of my community.	2.51	1.17
17. The interaction in the short story made me feel like an honest, law-abiding citizen.	2.86	1.07
18. The interaction in the short story made me feel proud to be a part of my community.	2.48	1.14
Cronbach's alpha =		0.94

Mean inter-item $r =$	0.85
Mean item-total $r =$	0.88

^a Response set ranges from 1 = strongly disagree to 4 = strongly agree

^b Response set ranges from 1 = not at all willing to 4 = very willing

^c Response set ranges from 1 = very dissatisfied to 4 = very satisfied

Note. Items presented in this table are standardized.

Analytic Strategy

The analyses in chapter 4 are presented across four sections. The first section focuses on two bivariate correlation matrices—one featuring the variables associated with the 911 call-taker scenario and another for the police encounter vignette. Here, attention will be directed toward the correlations between the independent variables and the relationships between these same variables and the dependent variables. The latter will provide information that can be used as preliminary hypothesis testing. The following three sections focus on the results from a series of multivariate regression models. In section two of the chapter, primary interest focuses on the direct effects of procedural injustice and distributive justice on social identity, and whether the latter mediates these effects on legitimacy and its constituent elements (i.e., obligation to obey, trust, and normative alignment; Tyler & Jackson, 2014). This portion of the chapter presents analyses for both the call-taker and police officer scenarios. Section three focuses on the direct and mediating effects of normative obligation to obey (used as measure of legitimacy) on immediate and future cooperation. It should be noted that additional assessments were conducted to ensure that the results from sections two and three are not sensitive to changes in model specification (i.e., the addition of statistical control variables; see Appendix D). Finally, in the last section of chapter 4, the spill-over effect will be investigated using linear regression models, as well as the ability of the police to correct the situation and, essentially, “clean up the spill.”

Ordinary least-squares (OLS) regression models were estimated to test the hypotheses in a multivariate context. The interpretation of observed relationships is based on standardized partial regression coefficients (β) that allow for comparisons of effect sizes both within and across regression models. Due to the presence of heteroscedasticity, as indicated by Breusch-Pagan/Cook-Weisberg tests, test statistics (i.e., *t*-tests) were estimated using robust standard errors in Stata 15 (Breusch & Pagan, 1979; Cook & Weisberg, 1983).

Sobel tests were conducted to confirm statistically significant mediation effects (Sobel, 1982). There is some debate surrounding the use of Sobel tests, with some scholars supporting its use (see Baron & Kenny, 1986; Koopman et al., 2014) and others criticizing it because of the “assumption of normality for the indirect effect sampling distribution” (Koopman et al., 2014, p. 224; see Preacher & Hayes, 2004; Shrout & Bolger, 2002). While this concern may be valid for small sample studies where bootstrapping may be preferred (Shrout & Bolger, 2002), the Sobel test has been shown to be reliable when using larger samples (Koopman et al., 2014; Örs Özdi & Kutlu, 2019). Given the large sample size used in this study (approximately 1,500 participants), the Sobel test was deemed appropriate for validating hypothesized mediation effects.

CHAPTER 4

RESULTS

This chapter presents the primary empirical findings and is comprised of four broad sections. The first section presents bivariate correlation matrices that are estimated for each criminal justice actor—call-taker and police officer—to provide a preliminary examination of the relationships between the variables of interest. The next section focuses on linear regression models that test the direct effects of procedural (in)justice and distributive justice on social identity and legitimacy. Attention is also paid to the mediating effects of social identity in this section. Models are estimated for both the call-taker and the police officer. In the third section, the direct and mediating effects of one element of legitimacy—normative obligation to obey—are tested. Importantly, the other two parts of legitimacy (i.e., trust and alignment) were too highly correlated with the procedural injustice conditions to estimate unbiased statistical models. The dependent variables in this section include both immediate cooperation and future cooperation for both the call-taker scenario and the police officer encounter scenario. In the fourth and final section, the “spill-over effect” is examined using linear regression models. Finally, a split sample approach is used to test whether the police are able to “clean up the spill.”

Preliminary Analyses

Prior to estimating the multivariate regression models, bivariate correlation estimates were carried out for both call-taker and police officer measures to assess the theoretical relationships, as well as examine the relationships between the independent variables (see Tables 7 and 8). The Pearson’s correlation coefficients for procedural injustice indicated statistically significant ($p < 0.001$, two-tailed test), negative

correlations of varying strength across each of the outcome measures for both call-takers and police officers.³ For example, across both criminal justice actors, procedural injustice was negatively and significantly correlated with legitimacy ($r = -0.74$ for call-taker; $r = -0.78$ for police officer). Similar findings were observed when evaluating the correlation between procedural injustice and social identity for the police officer ($r = -0.73$), with a relatively weaker but still moderately strong, significant negative relationship for the call-taker across the same measures ($r = -0.55$).

This pattern of negative and significant correlations was observed when looking at the different parts of legitimacy—obligation, trust, and alignment. Speaking first to normative obligation to obey, this measure demonstrated the weakest correlation to procedural injustice compared to the other components of legitimacy for both criminal justice actors ($r = -0.26$ for call-taker; $r = -0.45$ for police officer). Trust, on the other hand, exhibited a relatively stronger negative and significant correlation with procedural injustice ($r = -0.77$ for call-taker; $r = -0.79$ for police officer). In a similar fashion, normative alignment displayed a very strong correlation with procedural injustice ($r = -0.82$ for call-taker; $r = -0.86$ for police officer).

Turning to the two cooperation measures, procedural injustice exhibited statistically significant, though relatively weaker when compared to legitimacy, negative correlations for both immediate cooperation with call-takers ($r = -0.40$) and police

³ Several scholars have noted “the p -value problem,” or the idea that, for larger samples, finding statistical significance is far more frequent owed to a greater sensitivity to relatively small effects (Chatfield, 1995; Lin et al., 2013). As such, it is important for researchers to adjust the threshold for determining statistical significance to avoid a Type 1 error when working with larger samples (see Blumstein, 2010). While an imperfect method, adopting a stricter level of statistical significance (i.e., 0.001 rather than 0.05) does reduce the probability of reaching false conclusions (Winship & Zhuo, 2018). For these reasons, a stricter level of statistical significance was adopted for these analyses.

officers ($r = -0.48$). This same pattern was also observed for future cooperation with call-takers ($r = -0.27$) and police officers ($r = -0.39$). As for the correlation between legitimacy and these cooperation items, far stronger correlations were observed. Speaking first to immediate cooperation, legitimacy was a positive and significant correlate for both justice actors ($r = 0.60$ for call-taker & $r = 0.71$ for police officer). This correlation was slightly tempered for future cooperation ($r = 0.43$ for call-taker; $r = 0.61$ for police officer).

Parsing this out further across each dimension of legitimacy, normative obligation to obey appears to be the strongest correlate of immediate cooperation for both justice actors ($r = 0.55$ for call-taker; $r = 0.75$ for police officer), followed by trust ($r = 0.55$ for call-taker; $r = 0.64$ for police officer) and normative alignment ($r = 0.48$ for call-taker; $r = 0.59$ for police officer), respectively. A similar pattern emerges for future cooperation for the police officer, with obligation to obey displaying the strongest, positive correlation with future cooperation ($r = 0.60$). Once again, trust ($r = 0.57$) and normative alignment ($r = 0.53$) follow closely behind. For call-takers, there is a slight deviation in configuration, with trust emerging as the stronger correlate ($r = 0.39$) relative to normative obligation ($r = 0.36$) and normative alignment ($r = 0.37$), though these correlations, while statistically significant, are comparatively weak in nature. Overall, these findings are consistent with past research, emphasizing the importance of procedural justice in forming legitimacy perceptions (Reisig et al., 2007; Tyler, 2001, 2005), and the subsequent impact of legitimacy perceptions on cooperation and compliance (Bradford et al., 2014a; Reisig et al., 2012; Sunshine & Tyler, 2003).

The findings for distributive justice show that it is a much weaker correlate of legitimacy, social identity, and cooperation compared to procedural injustice. For example, the correlations between distributive justice and legitimacy ($r = 0.09, p < 0.001$ for call-taker; $r = 0.02, p = 0.57$ for police officer), social identity ($r = 0.05, p = 0.06$ for call-taker; $r = 0.02, p = 0.51$ for police officer), immediate cooperation ($r = 0.09, p < 0.001$ for both call-taker and police officer), and future cooperation ($r = 0.02, p = 0.46$ for call-takers; $r = 0.03, p = 0.28$ for police officer) were very weak relative to procedural injustice and often times not statistically significant ($p < 0.05$, two-tailed test). For each component of legitimacy—normative obligation to obey ($r = 0.05, p = 0.06$ for call-taker; $r = 0.03, p = 0.25$ for police officer), trust ($r = 0.10, p < 0.001$ for call-taker; $r = 0.00, p = 0.99$ for police officer), and normative alignment ($r = 0.08, p < 0.01$ for call-taker; $r = 0.01, p = 0.58$ for police officer)—distributive justice was similarly a weak correlate. These findings are also consistent with past research that demonstrates distributive justice judgments are weaker correlates of legitimacy perceptions and related outcomes (Sunshine & Tyler, 2003; Tyler, 1988; Tyler & Huo, 2002).

As for correlations between control variables and the outcome measures of interest, a few patterns emerge. Across both criminal justice actors, Hispanic, education, yearly income, and occupation classification demonstrated no significant levels of correlation with any of the outcome measures. For the call-taker, of the control variables that did rise to the level of statistical significance (e.g., male, age, white, married, social desirability), each was of negligible strength as determined by standard thresholds for levels of correlation in the behavioral sciences (Evans, 1995). As for the police officer, there appears to be a relatively weak, but statistically significant, positive age effect for

several of the outcome variables (i.e., normative obligation to obey, immediate cooperation, future cooperation). To account for this, sensitivity analyses were conducted to determine the robustness of the multivariate effects presented later in this chapter.⁴

While the results of these bivariate analyses are consistent with the theoretical expectations discussed in chapter 2, more sophisticated and robust analyses are conducted to better scrutinize the hypotheses of interest before conclusions related to theory, policy, and service are reached.

⁴ Broadly speaking, the utility of sensitivity analysis has long been recognized as a valuable tool in determining the “robustness of statistical inferences” (Thomas et al., 2018, p. 637; see also Imbens, 2003; Rosenbaum & Rubin, 1983). Here, all control variables were entered into the multivariate OLS regression models that examined the direct effects of procedural injustice and distributive justice on legitimacy, immediate cooperation, and future cooperation, as well as the mediating role of social identity and normative obligation to obey. Upon doing so, it was determined that their inclusion did not significantly impact the magnitude nor the directionality of the standardized regression coefficients when the same models were estimated without controls present. As such, these sensitivity analyses are presented in the Appendix, and the primary models that appear in-text are free of controls.

Table 7*Bivariate Correlations for Study Variables – Call-taker Scenario*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1 Normative Obligation to Obey the Call-taker	1.00																		
2 Trust in the Call- taker	0.49*	1.00																	
3 Normative Alignment with the Call-taker	0.42*	0.90*	1.00																
4 Call-taker Legitimacy	0.69*	0.95*	0.93*	1.00															
5 Social Identity – Call-taker	0.40*	0.60*	0.64*	0.65*	1.00														
6 Immediate Cooperation – Call- taker	0.55*	0.55*	0.48*	0.60*	0.46*	1.00													
7 Future Cooperation – Call-taker	0.36*	0.39*	0.37*	0.43*	0.44*	0.56*	1.00												
8 Procedural Injustice	0.26*	0.77*	0.82*	0.74*	0.55*	0.40*	0.27*	1.00											
9 Distributive Justice	0.05	0.10*	0.08	0.09*	0.05	0.09*	0.02	0.01	1.00										
10 Male	-0.03	-0.01	0.01	-0.01	-0.00	0.10*	-0.08	0.02	-0.02	1.00									
11 Age	0.04	0.05	0.05	0.05	0.08	0.09*	0.19*	-0.02	-0.02	-0.01	1.00								
12 White	0.03	0.04	0.04	0.04	-0.03	0.10*	0.09	-0.03	-0.01	0.00	0.22*	1.00							
13 Hispanic	0.00	-0.02	-0.02	-0.01	-0.00	-0.01	-0.01	-0.02	0.03	0.01	0.13*	-0.06	1.00						
14 Education	-0.06	-0.02	-0.01	-0.03	0.01	-0.05	-0.01	0.01	-0.01	0.01	0.18*	-0.03	-0.06	1.00					
15 Married	0.00	0.01	0.05	0.03	0.09*	0.02	0.09*	-0.01	-0.02	0.00	0.28*	0.14*	-0.02	0.17*	1.00				
16 Yearly Income	-0.02	-0.00	0.01	-0.00	0.04	-0.04	0.04	0.01	-0.05	0.10*	0.13*	-0.00	-0.01	0.41*	0.38*	1.00			
17 Occupation Classification	-0.00	0.00	0.01	0.00	-0.02	-0.00	-0.00	-0.01	-0.02	0.07	-0.05	-0.00	0.03	0.36*	0.09*	0.44*	1.00		
18 Social Desirability	0.13*	0.05	0.06	0.09	0.13*	0.13*	0.17*	0.01	0.02	0.02	0.09*	-0.01	0.02	-0.08	0.05	-0.00	-0.05	1.00	

* $p < 0.001$ (two-tailed test)

Table 8*Bivariate Correlations for Study Variables – Police Officer Scenario*

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	Normative Obligation to Obey the Police Officer	1.00																		
2	Trust in the Police Officer	0.69*	1.00																	
3	Normative Alignment with the Police Officer	0.62*	0.93*	1.00																
4	Police Officer Legitimacy	0.82*	0.97*	0.95*	1.00															
5	Social Identity – Police Officer	0.60*	0.80*	0.82*	0.81*	1.00														
6	Immediate Cooperation – Police Officer	0.75*	0.64*	0.59*	0.71*	0.58*	1.00													
7	Future Cooperation – Police Officer	0.60*	0.57*	0.53*	0.61*	0.52*	0.73*	1.00												
8	Procedural Injustice	- 0.45*	- 0.79*	- 0.86*	- 0.78*	- 0.73*	- 0.48*	- 0.39*	1.00											
9	Distributive Justice	0.03	0.00	0.01	0.02	0.02	0.09*	0.03	0.01	1.00										
10	Male	0.00	0.03	0.04	0.03	0.02	-0.06	-0.04	0.01	-0.01	1.00									
11	Age	0.20*	0.17*	0.13*	0.18*	0.12*	0.21*	0.26*	-0.05	0.01	-0.01	1.00								
12	White	0.06	0.02	0.02	0.03	-0.02	0.08	0.09*	-0.01	-0.02	0.00	0.22*	1.00							
13	Hispanic	-0.03	-0.06	-0.05	-0.05	-0.06	-0.04	-0.06	0.03	-0.01	0.01	- 0.13*	-0.06	1.00						
14	Education	-0.01	-0.02	-0.00	-0.01	-0.01	0.00	0.04	0.04	0.01	0.01	0.18*	-0.03	-0.06	1.00					
15	Married	0.12*	0.08	0.07	0.10*	0.08	0.11*	0.14*	-0.02	0.01	0.00	0.28*	0.14*	-0.02	0.17*	1.00				
16	Yearly Income	0.03	-0.00	0.00	0.01	0.01	0.02	0.07	0.03	0.01	0.10*	0.13*	-0.00	-0.01	0.41*	0.38*	1.00			
17	Occupation Classification	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.01	0.03	0.03	0.07	-0.05	-0.00	0.03	0.36*	0.09*	0.44*	1.00		
18	Social Desirability	0.13*	0.07	0.04	0.08	0.10*	0.11*	0.15*	0.03	0.06	0.02	0.09*	-0.01	0.02	-0.08	0.05	-0.00	-0.05	1.00	

* $p < 0.001$ (two-tailed test)

Social Identity and Legitimacy Regression Analyses

To further investigate the theorized relationships revealed, a series of OLS regression models were estimated. Attention turns to the role of social identity in the formation of legitimacy perceptions, as well as the direct effects of procedural injustice and distributive justice on legitimacy perceptions. As stated in Chapter 2, it is theorized that group membership, or social identification, mediates the relationship between procedural justice and legitimacy (Bradford et al., 2014b; Tyler & Blader, 2003). As such, this set of analyses seeks to understand this relationship within the context of the call-taker and the police officer.

Call-taker Social Identity and Legitimacy OLS Regression Models

Speaking first to the call-taker (see Table 9), the standardized coefficients (β) for the direct effect of procedural injustice and distributive justice on social identity (see Model 1) indicates that participants who received a procedurally unjust call-taker experienced a 0.55 standard deviation decrease in social identity. In comparison, distributively just treatment from the call-taker only resulted in a 0.05 standard deviation increase in social identity. When looking at the effect of procedural injustice and distributive justice on legitimacy (see Model 2), similar differences in relative magnitude are revealed, with the magnitude of procedural injustice being about eight times larger than that of distributive justice, thus confirming the greater salience of procedural justice (or lack thereof) in the formation of legitimacy perceptions. Importantly, these first two models serve as valuable baselines for comparing the observed relationships once social identity is included in the model as a mediating variable (Baron & Kenny, 1986).

When including social identity in the model (see Model 3), the magnitude of the standardized procedural injustice coefficient is reduced by about 25%, suggesting social identity mediates the relationship between procedural injustice and call-taker legitimacy. Further evidence of this mediation is demonstrated by the results of a Sobel test (Sobel test: $z = -12.93$, $p < 0.01$). A similar mediation can be observed for distributive justice, also confirmed through a Sobel test (Sobel test: $z = 2.47$, $p < 0.05$), though the effect size was rather low to begin with. It is important to note that the steady statistical significance of the test statistic (t -test) at the 0.001 level across models for both procedural injustice and distributive justice, even upon the introduction of social identity, suggests that this mediation is only partial in nature.

Table 9

OLS Regression Models for Social Identity and Call-taker Legitimacy

Variables	Social Identity			Call-taker Legitimacy					
	Model 1			Model 2			Model 3		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-1.02 (0.04)	-0.55	-24.82***	-1.23 (0.03)	-0.75	-42.44***	-0.92 (0.04)	-0.56	-24.16***
Distributive Justice	0.10 (0.04)	0.05	2.36*	0.15 (0.03)	0.09	5.23***	0.12 (0.03)	0.07	4.64***
Social Identity	---	---	---	---	---	---	0.30 (0.02)	0.34	14.09***
F	309.06***			931.71***			1,025.09***		
R ²	0.31			0.56			0.64		

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

To further explore these relationships, OLS regression models were estimated for each component of legitimacy independently (i.e., normative obligation to obey, trust, and normative alignment). First, normative obligation to obey the call-taker was regressed onto procedural injustice and distributive justice (see Model 1 in Table 10). Recall that normative obligation to obey refers to the felt duty to heed directives handed down by authority figures, in this case the call-taker, because it is the right thing to do (Gau, 2011). Both experimental conditions significantly predict this criterion variable. When social identity is entered into the model, the test statistics for procedural injustice and distributive justice are no longer significantly different from zero, signifying a full mediation (Sobel test: $z = -9.31$, $p < 0.01$ for procedural injustice; $z = 2.43$, $p < 0.05$ for distributive justice). Further, the magnitude of the effect size for procedural injustice and distributive justice is reduced by 81% and 40%, respectively, with the inclusion of social identity, highlighting the extent of the mediation effect.

Table 10

OLS Regression Models for Normative Obligation to Obey the Call-taker

Variables	Normative Obligation to Obey the Call-taker					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-0.39 (0.04)	-0.26	-9.97***	-0.08 (0.05)	-0.05	-1.66
Distributive Justice	0.08 (0.04)	0.05	2.02*	0.05 (0.04)	0.03	1.33
Social Identity	---	---	---	0.30 (0.03)	0.37	11.08***
	F	51.93***			85.66***	
	R ²	0.07			0.16	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

When applying this same modeling approach to the second component of legitimacy–trust in the call-taker–noticeably less robust findings are revealed (see Table 11). Indeed, this model reveals only a partial mediation (Sobel test: $z = -9.04, p < 0.01$ for procedural injustice; $z = 2.42, p < 0.05$ for distributive justice), with the reductions in standardized regression coefficients being more modest in nature (18% for procedural injustice; 10% for distributive justice). Like the previous models, the absolute value of the standardized regression coefficient for procedural injustice far exceeds that of distributive justice, in this case seven times larger in size. However, it seems that the largest direct effect distributive justice has is on trust in the call-taker, with a standardized coefficient of 0.10, compared to 0.05 for normative obligation to obey and 0.08 for normative alignment (see Table 12). This is held true even with the introduction of social identity.

Table 11

OLS Regression Models for Trust in the Call-taker

Variables	Trust in the Call-taker					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-1.60 (0.04)	-0.77	-45.40***	-1.31 (0.05)	-0.63	-26.72***
Distributive Justice	0.21 (0.04)	0.10	5.95***	0.18 (0.03)	0.09	5.44***
Social Identity				0.29 (0.03)	0.26	10.85***
	F	1,076.52***		F		1,059.94***
	R ²	0.60		R ²		0.64

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

Looking now to the last component of legitimacy, normative alignment with the call-taker, similar trends as those presented in Table 11 are observed (see Table 12). Again, it appears that social identity partially mediates the effect of procedural injustice (Sobel: $z = -12.93$, $p < 0.01$) and distributive justice (Sobel: $z = 2.47$, $p < 0.01$) on normative alignment. The reductions in standardized coefficients across the independent variables are also nearly identical to that observed in the trust models (18% for procedural injustice; 12.5% for distributive justice). The direct effect for procedural injustice is strongest for normative alignment. Here, participants who received a procedurally unjust call-taker experienced a 0.82 standard deviation decrease in normative alignment, relative to a 0.26 decrease in obligation to obey and 0.77 decrease in trust in the call-taker. This sizable effect size holds even with the introduction of social identity.

Table 12

OLS Regression Models for Normative Alignment with the Call-taker

Variables	Normative Alignment with the Call-taker					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-1.69 (0.03)	-0.82	-54.00***	-1.38 (0.04)	-0.67	-31.36***
Distributive Justice	0.17 (0.03)	0.08	5.29***	0.14 (0.03)	0.07	4.69***
Social Identity	---	---	---	0.30 (0.02)	0.27	12.64***
	F	1,484.16***		1,650.21***		
	R ²	0.68		0.73		

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

Police Officer Legitimacy OLS Regression Models

Like the call-taker models, OLS regression models were estimated to test the direct effect of procedural injustice and distributive justice on social identity and perceptions of police legitimacy, as well as test the mediating effect of social identity (see Table 13). Turning to the direct effect of procedural injustice and distributive justice on social identity (see Model 1), the standardized procedural injustice coefficient reveals that participants who received procedurally unjust treatment at the hands of the police officer experienced a 0.73 standard deviation decrease in social identity. Distributively just treatment from the police officer, however, only resulted in a 0.02 standard deviation increase in immediate cooperation, though this finding did not reach statistical significance. The difference in relative magnitude of these two dimensions of justice perceptions is consistent with the earlier findings presented in relation to the call-taker. Interestingly, procedurally unjust treatment from the police officer had a greater effect on social identity than that of the call-taker ($\beta = -0.55$; see Table 9). This seems to suggest that, while procedural injustice on the part of either justice actor has a statistically significant negative consequence for social identity, the authority figure carrying the most relative weight in the formation of group membership is the police officer.

Turning now to police officer legitimacy, procedural injustice emerges again as the only statistically significant predictor, with participants who received the procedurally unjust police officer experiencing a 0.79 standard deviation decrease in legitimacy perceptions. Once social identity is included in the model, this value decreases by 48%, indicating a mediation effect. However, this mediation is partial in nature given the

consistent statistical significance of the procedural injustice test statistic across Models 2 and 3. A Sobel test was conducted for procedural injustice (Sobel: $z = -12.93, p < 0.01$), confirming this mediation.

Table 13

OLS Regression Models for Social Identity and Police Officer Legitimacy

Variables	Social Identity			Police Officer Legitimacy					
	Model 1			Model 2			Model 3		
	<i>b</i>	β	<i>t</i> -test	<i>b</i>	β	<i>t</i> -test	<i>b</i>	β	<i>t</i> -test
	(s.e.)			(s.e.)			(s.e.)		
Procedural Injustice	-1.57 (0.04)	-0.73	-40.34***	-1.51 (0.03)	-0.79	-47.71***	-0.78 (0.05)	-0.41	-14.96***
Distributive Justice	0.05 (0.04)	0.02	1.31	0.04 (0.03)	0.02	1.33	0.02 (0.03)	0.01	0.71
Social Identity	---	---	---	---	---	---	0.46 (0.02)	0.52	19.09***
F	813.71***			1,139.46***			1,639.35***		
R ²	0.53			0.62			0.74		

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

OLS regression models were also conducted for each individual element of legitimacy (i.e., normative obligation to obey, trust, and normative alignment). First, normative obligation to obey the police officer was regressed onto procedural injustice and distributive justice (see Table 14). Next, social identity was included in the model to test whether it mediated this relationship. Looking first at Model 1, statistical significance is only demonstrated by the procedural injustice variable. Here, participants who were recipients of procedurally unjust treatment at the hands of the police experienced a 0.45 standard deviation decrease in felt obligation to obey. When social identity is entered into the model (see Model 2), the standardized coefficient for procedural injustice is reduced by 91% and becomes nonsignificant, indicating that social identity fully mediates this

relationship, a finding supported through a Sobel test (Sobel: $z = -14.55, p < 0.01$). This is consistent with the findings for the effect of procedural injustice on normative obligation to obey the call-taker, in that this relationship was also fully mediated by social identity (see Table 10).

Table 14

OLS Regression Models for Normative Obligation to Obey the Police Officer

Variables	Normative Obligation to Obey the Police Officer					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-0.80 (0.04)	-0.45	-19.23**	-0.07 (0.06)	-0.04	-1.10
Distributive Justice	0.06 (0.04)	0.03	1.44	0.04 (0.04)	0.02	0.97
Social Identity	---	---	---	0.47 (0.03)	0.57	15.58***
	F	185.29***			237.82***	
	R ²	0.21			0.36	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

For trust in the police officer, similar patterns in the direct effects of procedural injustice and distributive justice on this element of legitimacy are observed. Once again, distributive justice fails to reach statistical significance. Procedural injustice, however, reaches statistical significance and is partially mediated by social identity (Sobel: $z = -14.82, p < 0.01$), resulting in a 43% reduction in the procedural injustice standardized regression coefficient. Similar to the findings for call-takers, the magnitude of the procedural injustice effect on trust is far larger than for normative obligation to obey.

Table 15*OLS Regression Models for Trust in the Police Officer*

Variables	Trust in the Police Officer					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-1.77 (0.04)	-0.79	-49.02***	-1.01 (0.06)	-0.45	-16.33***
Distributive Justice	0.02 (0.04)	0.01	0.44	-0.01 (0.03)	-0.00	-0.28
Social Identity				0.48 (0.03)	0.47	17.18***
	F	1,202.19***		F		1,619.70***
	R ²	0.63		R ²		0.73

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

Lastly, regression models were estimated to test direct effects for procedural injustice, distributive justice, and social identity on normative alignment with the police officer. Presented in Table 16, the findings indicate that participants who were treated poorly by the police officer experienced a 0.86 standard deviation reduction in normative alignment with the officer. This coefficient was reduced by nearly 35% in Model 2 upon the inclusion of social identity, though the test statistic remained significant at the 0.001 level. These findings, when coupled with the results of a Sobel test (Sobel: $z = -13.46$, $p < 0.01$), indicate that social identity partially mediates the relationship between procedural injustice and normative alignment. Distributive justice did not achieve statistical significance.

Table 16*OLS Regression Models for Normative Alignment with the Police Officer*

Variables	Normative Alignment with the Police Officer					
	Model 1			Model 2		
	<i>b</i>	β	<i>t</i> -test	<i>b</i>	β	<i>t</i> -test
	(s.e.)			(s.e.)		
Procedural Injustice	-1.95 (0.03)	-0.86	-62.41***	-1.27 (0.06)	-0.56	-22.22***
Distributive Justice	0.05 (0.03)	0.02	1.60	0.03 (0.03)	0.01	1.06
Social Identity	--- ---	---	---	0.43 (0.03)	0.41	17.09***
F		1,962.55***			3,017.95***	
R ²		0.73			0.81	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Summary of Findings

Across each model for both criminal justice actors, procedural injustice emerged as a reliable, statistically significant predictor of social identity, legitimacy, and each of the individual components of legitimacy. Notably, procedural injustice demonstrated the strongest effect on normative alignment for both the call-taker and police officer, followed by trust and normative obligation to obey, with the latter exhibiting the weakest relationship. Also of note, each model revealed partial mediation by social identity with two exceptions. Indeed, full mediation was found for the OLS regression models for normative obligation to obey both the call-taker and the police officer. For each of these models, the standardized regression coefficient for social identity was larger in magnitude than those for the other two components of legitimacy for both justice actors, suggesting the weaker relationship between procedural injustice and obligation to obey was likely due to the full mediation effect of social identity in the models.

Where the models for the call-taker and the police officer diverge is in their findings related to distributive justice, suggesting interesting implications for the difference in relative importance of distributive concerns for call-takers and police officers. Recall that for the call-taker, distributive justice was a significant predictor of social identity, legitimacy, and its components, often at the 0.001 level. On the other hand, for the police officer, distributive justice did not reach statistical significance across any of the models discussed in this section. Moreover, in each model, the relative magnitude of the effect size for distributive justice was greater in the call-taker regression models compared to the police officer regression models. This may suggest that distributive concerns, though less salient than procedural concerns across the board, are of greater importance in interactions with call-takers than interactions with police officers. This is likely owed to the more prominent role of call-takers as resource providers compared to police officers.

Turning now to social identity, several patterns emerge. First looking at Model 3 of the OLS regression models for social identity and the full legitimacy scale, while procedural injustice and distributive justice appear to exact a larger effect in the call-taker model, as noted by the greater magnitude and statistical significance of their standardized regression coefficients, social identity exhibits a larger effect in the police officer model. This suggests that, while social identity mediates the effect of procedural injustice on legitimacy for both justice actors, social identity seems to play a more seminal role in the formation of legitimacy perceptions for the police officer compared to the call-taker. This pattern holds across each of the independent components of legitimacy as well.

Normative Obligation to Obey and Cooperation Regression Analyses

Beyond the mediating role of social identity in forming legitimacy perceptions, it is also theorized that perceptions of legitimacy mediate the relationship between procedural (in)justice—and to a lesser extent distributive justice—and the willingness to cooperate with criminal justice actors. That is to say, all else being equal, authority figures who behave in ways that communicate quality treatment and decision-making (and provide fair outcomes) will inspire greater levels of legitimacy (Reisig et al., 2007; Tyler, 1990, 2001, 2005). Legitimacy, in turn, encourages a greater willingness to cooperate (Bradford et al., 2014a; Sunshine & Tyler, 2003)—so the effect of fairness operates via legitimacy. To test this mediation hypothesis, a series of OLS regression models were estimated. However, because two elements of legitimacy (i.e., trust and normative alignment) were highly correlated with the procedural injustice stimulus, normative obligation to obey was used in place of the legitimacy.

Call-taker Cooperation OLS Regression Models

Looking to the direct effect of procedural injustice and distributive justice on immediate cooperation (see Model 1 in Table 17), both experimental manipulations significantly predict normative obligation to obey. Further, the standardized coefficients indicate that participants who received a procedurally unjust call-taker experienced a 0.40 standard deviation decrease in their willingness to cooperate with the call-taker during their interaction. In comparison, distributively just treatment from the call-taker only resulted in a 0.09 standard deviation increase in immediate cooperation. This smaller effect size once again confirms the greater salience of procedural injustice in forming

post-interaction perceptions of not only social identity, legitimacy, and its components, but also immediate cooperation.

Shifting focus to the mediating effect of normative obligation to obey the call-taker (see Model 2), a partial mediation for both procedural injustice (Sobel: $z = -8.37$, $p < 0.01$) and distributive justice (Sobel: $z = 1.99$, $p < 0.05$) is revealed. Indeed, when including normative obligation to obey in the model, the magnitude of the standardized procedural injustice coefficient is reduced by 30%, and the distributive justice standardized coefficient falls by roughly 22%. Interestingly, among the models discussed thus far that have also indicated a partial mediation, this is the only model in which the standardized coefficient for the mediating variable exceeds the procedural injustice standardized coefficient (in absolute value), indicating the greater relative strength of the mediating variable compared to the experimental manipulation in predicting the outcome measure of interest.

Table 17

OLS Regression Models for Immediate Cooperation with the Call-taker

Variables	Immediate Cooperation with the Call-taker					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-0.62 (0.04)	-0.40	-16.47***	-0.43 (0.03)	-0.28	-12.51***
Distributive Justice	0.15 (0.04)	0.09	3.87***	0.11 (0.03)	0.07	3.29***
Normative Obligation to Obey the Call-taker	---	---	---	0.49 (0.03)	0.48	17.55***
F		146.82***			236.74***	
R ²		0.17			0.38	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

When applying this same modeling approach to future cooperation (see Table 18), similar patterns emerge. First, procedurally unjust treatment at the hands of the call-taker significantly reduced participants' willingness to cooperate in the future with the call-taker, though the magnitude of this effect is lower for future cooperation than what was found for immediate cooperation ($\beta = -.27$ versus $-.40$). This suggests that unjust treatment may be more consequential in the short-term relative to the long-term, a relationship that is consistent with past literature (see Tyler, 2003). However, this particular puzzle is beyond the scope of the current study. As for distributive justice, this variable fails to reach statistical significance. In terms of mediation, normative obligation to obey partially mediates the relationship between procedural injustice and future cooperation (Sobel: $z = -6.98, p < 0.01$), with normative obligation once again exerting the strongest influence on cooperation. Finally, it is worth noting that the model amount of explained variation was more modest in Model 2 ($R^2 = 0.17$) when compared to the similar model in Table 17.

Table 18*OLS Regression Models for Future Cooperation with the Call-taker*

Variables	Future Cooperation with the Call-taker					
	Model 1			Model 2		
	<i>b</i>	β	<i>t</i> -test	<i>b</i>	β	<i>t</i> -test
	(s.e.)			(s.e.)		
Procedural Injustice	-0.40 (0.04)	-0.27	-10.69***	-0.28 (0.04)	-0.19	-7.59***
Distributive Justice	0.03 (0.04)	0.02	0.84	0.01 (0.04)	0.01	0.22
Normative Obligation to Obey the Call-taker	--- ---	---	---	0.30 (0.03)	0.31	10.74***
F		58.00***			82.18***	
R ²		0.08			0.17	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Police Officer Cooperation OLS Regression Models

OLS regression models were again estimated to test the direct effects of procedural injustice and distributive justice on immediate and future cooperation with the police officer. The mediating effect of normative obligation to obey was also assessed. Turning to Table 19, both procedural injustice and distributive justice are statistically significant predictors of immediate cooperation with the police officer, though in opposite directions and of varying magnitude. Indeed, poor treatment at the hands of the police result in a 0.48 standard deviation reduction in willingness to cooperate with the police officers on the scene, and distributively just treatment results in a much smaller positive effect ($\beta = 0.10$).

These findings are largely consistent with those presented in Table 17 for immediate cooperation with call-takers. Where these findings differ is in the magnitude of the effect of normative obligation to obey as a mediating variable. Here, the inclusion

of normative obligation to obey in the model results in a nearly 65% reduction in the standardized regression coefficient for procedural injustice. This is over twice as large of a reduction as that seen in the call-taker model for immediate cooperation, where there was only a 30% decline. Additionally, Sobel tests confirmed a partial mediation for procedural injustice (Sobel: $z = -16.96$, $p < 0.01$) and a nonsignificant z -statistic for distributive justice (Sobel: $z = 1.50$, $p = 0.13$), indicating a lack of mediation for this particular experimental variable.

Table 19

OLS Regression Models for Immediate Cooperation with the Police Officer

Variables	Immediate Cooperation with the Police Officer					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-0.81 (0.04)	-0.48	-20.54***	-0.30 (0.03)	-0.17	-8.77***
Distributive Justice	0.16 (0.04)	0.10	4.09***	0.12 (0.03)	0.07	4.21***
Normative Obligation to Obey the Police Officer	---	---	---	0.64 (0.02)	0.67	29.41***
	F	216.58***			554.48***	
	R ²	0.24			0.59	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Applying this same modeling approach to future cooperation (see Table 20), procedurally unjust treatment at the hands of the police officer is a statistically significant predictor of willingness to cooperate in the future, though the magnitude of this effect is less than what was demonstrated for immediate cooperation ($\beta = -.39$ versus $-.48$). Furthermore, the effect of distributive justice was nonsignificant. These findings are consistent with those identified in the call-taker findings, further supporting the relative

importance of procedural injustice in willingness to cooperate in the short-term relative to the long-term. As for the mediating effect of normative obligation to obey, procedural injustice partially mediated the effect between procedural injustice and future cooperation, as the Sobel test confirmed (Sobel: $z = -13.24, p < 0.01$).

Table 20

OLS Regression Models for Future Cooperation with the Police Officer

Variables	Future Cooperation with the Police Officer					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-0.67 (0.04)	-0.39	-15.82***	-0.25 (0.04)	-0.14	-5.91***
Distributive Justice	0.06 (0.04)	0.03	1.30	0.02 (0.04)	0.01	0.65
Normative Obligation to Obey the Police Officer	---	---	---	0.53 (0.03)	0.54	19.50***
F		125.65***			239.45***	
R ²		0.15			0.38	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Summary of Findings

The results of the cooperation OLS regression models revealed some consistent patterns. First, across both criminal justice actors, the direct effects of procedural injustice on cooperation, both in the present and in the future, were consistently significant, negative, and larger in magnitude when compared to distributive justice. Second, while distributive justice was a significant predictor of immediate cooperation across both the call-taker and the police officer models, it failed to reach statistical significance in the future cooperation models. Importantly, this finding is consistent with some preliminary research similarly observing the lack of association between

distributive justice and long-term cooperation and compliance but finding significant relationships between the former and short-term cooperation and compliance (Grace, 2020).

Turning to the patterns in mediation, while normative obligation to obey partially mediated the relationship between distributive justice and immediate and future cooperation with the call-taker ($p < 0.05$), it failed to do the same with these measures for the policing models. These findings once again allude to resource distribution being more salient to the call-taker interaction than the police officer interaction. As for procedural injustice, the effect of this variable on cooperation, both immediate and future, was consistently mediated by normative obligation to obey for both criminal justice actors. Further, in each model, normative obligation to obey was the variable with the strongest effect on cooperation. These findings confirm the theoretical assumption noted earlier that the effect of fairness operates through legitimacy (Bradford et al., 2014a; Sunshine & Tyler, 2003).

Lastly, when comparing the call-taker models to the police models, the standardized regression coefficients for normative obligation to obey were consistently larger in magnitude for the police officer models than those in the call-taker models. This suggests that normative obligation plays a more critical role in willingness to cooperate with the police than with the call-taker. And while these regression models offered greater theoretical clarity to the hypothesized direct and mediating effects of the variables of interest for each justice actor, focus will now turn to testing the presence, or absence, of spill-over, as well as the ability of the police to reverse negative outcomes owed to call-taker misbehavior.

Spill-over Regression Analyses

To this point, the hypothesized direct and mediating effects for both call-takers and the police actions and subsequent perceptions of participants have been supported by the estimates in previous regression models. Attention now turns to testing for the potential of spill-over effects. Previous research on spill-over has largely been confined to the effects of policing on the courts and has been exclusively tested using justice-involved samples. This study extends this work further by investigating the spill-over phenomenon among call-takers and the police using a quasi-representative sample of US adults.

To test the spill-over effect, regression models were estimated for the police cooperation variables (i.e., anticipated cooperation with the police officer, immediate cooperation with the police officer, future cooperation with the police officer). Across these models, each cooperation variable was regressed onto normative obligation to obey the call-taker and call-taker legitimacy.⁵ Looking first at Table 21, both normative obligation to obey the call-taker and call-taker legitimacy significantly predict participants' anticipated willingness to cooperate with the police officer. The standardized coefficient for the effect of normative obligation to obey the call-taker on anticipated cooperation with the police officer indicates that participants who experienced a greater felt obligation to obey the call-taker experienced a 0.31 standard deviation increase in their anticipated willingness to cooperate with the police on scene. For call-

⁵ The decision to not regress the outcome variables onto procedural injustice and distributive justice was based on findings that the variables behaved oddly, suggesting the presence of some sort of methodological artifact. Importantly, the inclusion of the procedural injustice manipulation did not substantively change the effect of normative obligation to obey, thus supporting the decision to exclude procedural injustice and distributive justice from the analyses.

taker legitimacy, the effect was slightly more modest, with a 0.20 standard deviation increase in anticipated cooperation with the police officer. In sum, these findings suggest that perceptions of call-taker legitimacy do indeed spill-over onto how willing participants are to cooperate with the police officer once they arrived on scene.

Table 21

OLS Regression Models Testing Spill-over Effects on Anticipated Cooperation with the Police Officer

Variables	Anticipated Cooperation with the Police Officer					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Normative Obligation to Obey the Call-taker	0.26 (0.03)	0.31	10.31***	---	---	---
Call-taker Legitimacy	---	---	---	0.16 (0.02)	0.20	7.55***
F		106.33***			57.07***	
R ²		0.09			0.04	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

The pattern of findings is markedly different when examining immediate cooperation with the police officer (see Table 22). First, normative obligation to obey the call-taker emerges as a significant predictor of immediate cooperation with the police officer. However, when comparing the magnitude of the standardized coefficients for this effect with that presented in Table 21 ($\beta = .19$ vs. $.31$), the effect size is approximately 40 percent weaker. The effect of call-taker legitimacy did not achieve statistical significance. Nevertheless, it appears that both anticipated cooperation with the police officer and immediate cooperation with the police officer are affected by participants' perceptions of the call-taker.

Table 22*OLS Regression Models Testing Spill-over Effects on Immediate Cooperation with the Police Officer*

Variables	Immediate Cooperation with the Police Officer					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Normative Obligation to Obey the Call-taker	0.21 (0.03)	0.19	6.68***	---	---	---
Call-taker Legitimacy	---	---	---	0.03 (0.03)	0.03	1.22
F		44.58***			1.48	
R ²		0.04			0.001	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Turning lastly to future cooperation with the police officer (see Table 23), both normative obligation to obey the call-taker and call-taker legitimacy significantly predict future cooperation, though the relative magnitude of the effect of normative obligation to obey the call-taker is about double that of call-taker legitimacy. These findings are similar to those presented in Table 21, once again suggesting that perceptions of the call-taker do indeed spill-over onto willingness to cooperate with the police in the future.

Table 23*OLS Regression Models Testing for Spill-over Effects on Future Cooperation with the Police Officer*

Variables	Future Cooperation with the Police Officer					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Normative Obligation to Obey the Call-taker	0.22 (0.03)	0.20	7.09***	---	---	---
Call-taker Legitimacy	---	---	---	0.11 (0.03)	0.10	3.89***
F		50.23***			15.11***	
R ²		0.04			0.01	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Summary of Findings

The results of the spill-over regression models revealed rather consistent patterns. While call-taker legitimacy was not as reliably predictive of the various forms of cooperation across models, normative obligation to obey the call-taker emerged as a consistently significant antecedent of anticipated cooperation, immediate cooperation, and future cooperation with the police officer. This demonstrates the effect of perceptions of call-taker legitimacy on willingness to cooperate in that participants who experienced a greater felt obligation to obey the call-taker were more likely to cooperate with the police officer at multiple stages (i.e., anticipated, immediate, and future). Further, this effect was consistently larger in magnitude than the effect of call-taker legitimacy. Though, it should be noted that the model amount of explained variation was quite low across all models ($R^2 < 0.09$). However, with these models indicating spill-over exists, attention now turns to testing the ability of the police officer to “clean it up.”

Clean Up Regression Analyses

To investigate the capacity of the police officer to “clean up” the spill (i.e., negative influence of call-takers on police encounters), a series of split sample regression models were estimated. The sample was split across the procedural injustice manipulation for the call-taker, with 704 participants having received a procedural injustice stimulus and 716 participants having been administered the procedural justice stimulus. From there, immediate cooperation with the police officer (see Table 24) and future cooperation with the police officer (see Table 25) were regressed onto police officer procedural justice and distributive justice for each subsample. It is important to highlight the variation in coding of the experimental condition relative to past models for the purposes of this specific test. Being that the interest of these models is to highlight the ability of the police to “clean up the spill,” the manipulation for treatment was coded as procedural justice, as opposed to past models where this manipulation was coded to reflect procedural injustice. Additionally, *z*-tests were conducted to estimate the difference between the two unstandardized regression coefficients presented for each subsample across the manipulation variables (Paternoster et al., 1998).

Turning first to the immediate cooperation with the police officer models (see Table 24), both police officer procedural justice and distributive justice emerge as significant predictors of immediate cooperation across both subsamples. Much like each of the other regression models presented to this point, procedural justice is once again a stronger predictor of the outcome variable relative to distributive justice in both models. The pattern of results for both subsamples are largely similar. For participants who received a procedurally just police officer, there was a 0.49 standard deviation increase in

their willingness to immediately cooperate with the police officer, irrespective of the treatment received at the hands of the call-taker. The z -test confirms that the difference between the subsamples is not statistically significant, indicating that the effect of police officer procedural justice is similar for participants who received a procedurally unjust call-taker and those who received a procedurally just call-taker. In short, police officers appear to be able to clean up the mess made by the call-taker. Similar findings are observed for police officer distributive justice, with the standardized coefficients for each subsample being similar in magnitude and a nonsignificant z -test demonstrating the effect of police officer distributive justice is experienced similarly for both subsamples.

Table 24

Split Sample OLS Regression Models Testing the “Clean Up” Hypothesis for Immediate Cooperation

Variables	Immediate Cooperation with the Police Officer						
	Call-taker Procedural Injustice Condition Subsample			Call-taker Procedural Justice Condition Subsample			z-test
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test	
Police Officer Procedural Justice	0.78 (0.05)	0.49	15.43***	0.86 (0.06)	0.49	14.77***	
Police Officer Distributive Justice	0.14 (0.05)	0.09	2.76**	0.19 (0.06)	0.11	3.26**	-0.64
F	121.62***			112.61***			
R ²	0.25			0.25			
N	704			716			

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test and *z*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

To test the ability of the police to “clean up” the spill in terms of future cooperation with the police officer, similar regression models were estimated (see Table 25). When compared to the results presented in Table 4.18, police officer procedural

justice was a significant predictor of future cooperation with the police officer across both subsamples. This effect was largely invariant between models when comparing the standardized regression coefficients ($\beta = .42$ and $.36$). The nonsignificant z -test confirms that the effect of police procedural justice on future cooperation with the police officer is similar for participants who received the procedurally unjust call-taker stimulus and participants who received the procedurally just call-taker stimulus. Unlike the previous model, the effect of police officer distributive justice on future cooperation with the police officer did not reach a level of statistical significance. This finding is consistent with the results presented in the cooperation OLS regression models, where distributive justice was a significant predictor of immediate cooperation for both the call-taker and the police officer (see Tables 17 and 19) but was not for future cooperation (see Tables 18 and 20).

Table 25

Split Sample OLS Regression Models Testing the “Clean Up” Hypothesis for Future Cooperation

Variables	Future Cooperation with the Police Officer						
	Call-taker Procedural Injustice Condition Subsample			Call-taker Procedural Justice Condition Subsample			z -test
	b (s.e.)	β	t -test	b (s.e.)	β	t -test	
Police Officer Procedural Justice	0.72 (0.06)	0.42	12.59***	0.64 (0.06)	0.36	10.28***	0.94
Police Officer Distributive Justice	0.02 (0.06)	0.01	0.36	0.10 (0.06)	0.05	1.54	---
F	79.62***			53.18***			
R ²	0.18			0.13			
N	704			716			

Note. Entries are unstandardized regression coefficients (b), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (t -test and z -test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Summary of Findings

These last two models in this chapter show that police officers can in fact “clean up” the spill caused by call-taker procedural injustice by treating people in a procedurally-just manner. This finding holds true for both immediate and future cooperation. This finding was supported using z -tests comparing the coefficients for each subsample—the results of which confirmed the effect of police procedural justice was invariant for participants, regardless of their experience with a call-taker. Unsurprisingly, police officer use of procedural justice was a more consistent and stronger predictor of cooperation compared to distributive justice, emphasizing its relative salience in getting an encounter back on track after unjust treatment on behalf of the call-taker. Furthermore, these models demonstrated better fit, with variance explained levels exceeding those of the spill-over regression models.

In sum, the findings from the spill-over and clean up models support the hypotheses laid out in Chapter 2. Perceptions of call-taker legitimacy does in fact affect citizen willingness to cooperate with the police. Further, police are not irrevocably hindered by this fact, as it appears that operating in a procedurally-just manner can function as means of reversing course—setting the encounter back on track and towards an amicable conclusion. The implications of these findings for theory and praxis will be discussed in further detail in the next and final chapter.

CHAPTER 5

DISCUSSION

Interest in the empirical investigation of justice judgments—both procedural and distributive—has been a principal focus of social science researchers for roughly 75 years. Systematic inquiry to this end has evolved substantially, with fluctuations in focus from perceived fairness of outcomes to perceived fairness of process (Tyler, 2000). The former, termed distributive justice, emphasizes the prominence of instrumental factors related to resource allocation in forming supportive attitudes and values. The latter, referred to as procedural justice, concerns itself more with relational factors communicated through the quality of decision-making and treatment (Blader & Tyler, 2003). And while distributive justice was of greater predominance in early justice research, work by Thibaut and Walker (1975, 1978), Leventhal (1980), and Lind and Tyler (1988), are largely credited with changing the conceptual narrative toward procedural justice (Radburn & Stott, 2019).

Contemporary research has continued in this vein, with far greater empirical attention being given to procedural justice relative to distributive justice. Namely, the process-based model, first theorized by Tyler (1990, 2003, 2006), has served as one of the preeminent models tested in this realm. According to this model, cooperation and compliance with criminal justice actors and the laws they aim to uphold flow through legitimacy perceptions. Such perceptions are formed as a result of relational cues (i.e., respectful treatment, allowance for participation, neutrality, and trustworthy motivations) (Jackson & Sunshine, 2007; Sunshine & Tyler, 2003; Tyler, 1990, 2006). These relational cues have also been linked to social identity, suggesting this concept mediates

the relationship between procedurally-just treatment and legitimacy. This model is also referred to as the group engagement model (Blader & Tyler, 2009; Tyler & Blader, 2003).

While the process-based model has been tested and supported across criminal justice contexts (e.g., policing, courts, and corrections) and in nonlegal contexts, a relatively tacit simplification can be found in the literature that the judgements made by citizens during interactions conform to the boundaries of that single exchange (Pickett et al., 2018). That is to say, less focus has been devoted to understanding how the treatment from one justice actor may influence the perceptions and actions taken with other actors downstream—a phenomenon referred to as procedural (in)justice spill-over (Casper et al., 1988). Spill-over has been examined most prominently within the context of spill-over from police to courts (see Alward & Baker, 2021; Baker et al., 2014; Brown et al., 2018; Casper et al., 1988), with markedly less attention paid to the spill-over from courts to corrections (Tatar et al., 2012). However, to date, there has been a criminal justice actor excluded from not only the spill-over literature, but the procedural justice literature more broadly—911 call-takers.

As the most anterior representative of the criminal justice system, often serving as the first and potentially sole point of contact citizens have with the criminal justice system (Gillooly, 2020; Leeney & Mueller-Johnson, 2012), it is particularly troubling to consider how deeply overlooked their position has gone to date. With preliminary research underscoring the impact of their treatment independently, as well as providing precursory evidence of spill-over to the police (Flippin et al., 2019), this dissertation aimed to further appreciate and unpack this phenomenon. Furthermore, this dissertation

forged a path towards a new line of research — “cleaning up” the spill. With past spill-over research stopping short of testing the capacity of subsequent justice actors to reverse the effects of procedural injustice by preceding justice actors, this project not only offers a new application of procedural justice, but also an extension of the understanding of spill-over. As such, the sections that follow will review the key findings of this study across various areas of interest—social identity, legitimacy, and cooperation; procedural injustice spill-over; and efforts to “clean-up” the spill—and also discuss the implications, limitations, and routes for future research endeavors owed to this study.

Summary of Key Findings

Social Identity, Legitimacy, and Cooperation

With the theorized mediating role of social identity in the relationship between procedural justice and legitimacy (Bradford et al., 2014b; Tyler & Blader, 2003), the first set of multivariate models sought to test this hypothesized relationship for both call-takers and police officers. Speaking first to the patterns revealed at the direct effect level first, across both criminal justice actors, procedural injustice significantly and negatively predicted social identity and legitimacy and its components, notably with larger effects for the police officer than the call-taker when comparing standardized regression coefficients. Distributive justice, on the other hand, was not a significant predictor of any of these outcomes for police officers. For call-takers, though a less salient predictor relative to procedural injustice, distributive justice was a consistent significant predictor of social identity, legitimacy, and the various components of legitimacy. This finding makes sense at an intuitive level, with call-takers serving a more pronounced role as

resource providers relative to police officers, suggesting instrumental concerns may prove to be more conspicuous in assessments of call-takers compared to police officers.

As for the mediation analyses, social identity served as a consistent mediating variable. Indeed, the relationship between procedural injustice and legitimacy, as well as the three subscales that make up legitimacy, was either partially or fully mediated across each model. Recall that the direct effects of procedural injustice for each outcome measure were much stronger for police officers than for call-takers. However, once social identity was entered into each model, the procedural injustice standardized coefficients for the call-taker remained larger in magnitude, and the social identity standardized coefficients for the police officer were consistently larger in size relative to those revealed in the call-taker models. This suggests that, while social identity explain legitimacy for both actors, it is a more powerful mediator for the police (i.e., accounting for more of the effect of procedural injustice on the outcomes of interest). The reason behind this could be a shortcoming of three-way disembodiment (Wang, 2020), in that physical proximity and presence may allow for more identity-relevant cues for forming perceptions of group membership to be available relative to the relegation to solely verbal communications, making social identity more actively formed during police interactions compared to call-taker interactions.

Speaking lastly to the cooperation models, procedural injustice significantly predicted present and future cooperation for both the call-taker and the police officer. Distributive justice, however, was weaker in magnitude and only significantly predicted immediate cooperation for each justice actor. Looking to the mediating effects, normative obligation to obey was used to test the extent to which the effect of fairness operates

through this element of legitimacy. The findings revealed that normative obligation to obey did indeed mediate the relationship between procedural injustice and both forms of cooperation for both call-takers and the police officer. Here, and similar to the social identity models, the mediation was more pronounced in the police models. This suggests that while these mediating variables do well in explaining the effect of procedural injustice on the outcome measures of interest, there may be some other variable at play for call-takers yet to be revealed owed to less empirical attention on their function in the criminal justice system. As for distributive justice, normative obligation to obey only served as a mediating variable for the call-taker, once again demonstrating the greater salience of distributive justice and instrumental concerns for call-takers compared to police officers.

Testing for Spill-over

With the hypothesized direct and mediating effects being largely supported by these initial multivariate models, attention turned to testing for spill-over effects. To do so, normative obligation to obey the call-taker and call-taker legitimacy were used to predict anticipated, immediate, and future cooperation with the police officer. Normative obligation to obey the call-taker emerged as a reliable, significant predictor of cooperation relative to call-taker legitimacy. Notably, participants with a greater felt obligation to obey the call-taker also reported a greater likelihood to cooperate with the police officer when anticipating whether to cooperate, during the encounter (immediate cooperation), and when considering potential future interactions. These tests were clear indications of spill-over. And while the explanatory power of the models was lower than

what might be expected, the findings provide a unique look at the spill-over between call-takers and the police.

Efforts to “Clean-up” the Spill

One of the key contributions of this project is the effort to not only demonstrate the presence of spill-over between call-takers and the police, but also to investigate the capacity of officers to “clean-up” the spill. To do so, recall that the sample was split into two subsamples, those who received a procedurally unjust call-taker and those who received a procedurally just call-taker. Immediate and future cooperation were then regressed onto police officer procedural and distributive justice, with procedural justice being employed rather than injustice, as in previous models, owed to interest being placed in officers’ ability to overcome call-taker misbehavior through procedurally just treatment.

The findings revealed that clean-up was indeed at play. For immediate cooperation, participants were equally as likely to cooperate with a procedurally just police officer irrespective of their experienced treatment at the hands of the call-taker, with z -tests confirming the effect of procedural justice on behalf of the officer was not significantly different for participants in each subsample. The same was found to be the case for future cooperation. As for distributive justice, while a significant predictor of immediate cooperation, the findings mirrored those of previous models, with instrumental concerns once again demonstrating lesser magnitude relative to relational concerns. Additionally, and similar to the previous cooperation models, distributive justice did not reach a level of statistical significance in the future cooperation model.

These clean-up models offer reason for optimism. Call-taker misconduct does not appear to condemn police to a position of irreversible despondence with a class of recalcitrant citizens—they can reset the paradigm. Procedural justice emerged as the strongest, most consistent method for cleaning up the spill, invariably improving immediate and future cooperation across participants, regardless of call-taker treatment. Such a finding, in tandem with the other findings revealed throughout the course of this dissertation, have important implications for practice and theory.

Practical Implications

With the most consistent finding being the importance and relative salience of procedural (in)justice, this study and the models therein support the continued adoption of procedural justice training. Importantly, this goes not only for the police, but also for call-takers—an effort echoed by other scholars as critically important for improving the legitimacy of the criminal justice system (see Quattlebaum et al., 2018). Some departments have already taken steps towards more purposefully integrating procedural justice in training for call-takers and dispatchers, with both the Stockton and Oakland Police Departments expressing dedication to this end as part of the California Partnership for Safe Communities (Gilbert et al., 2015). As stated by Gilbert and colleagues (2015), “developing procedural justice-based protocols for departmental functions that are highly visible or that involve interacting with numerous residents would leverage the opportunity these functions have to shape the community’s opinion of police” (p. 12).

In addition to the findings for procedural (in)justice, the patterns revealed for distributive justice as they relate to the call-taker are worth considering. While the effect size of distributive justice was admittedly smaller in magnitude relative to those

presented for procedural (in)justice, suggesting the outcomes of the interaction with the call-taker (i.e., response time) were of less importance compared to treatment by the call-taker, it was not trivial. As such, it is important that call-takers, in conjunction with training on the tenants of procedural justice, receive training that focuses on how meeting the instrumental needs of citizens can be beneficial in positively influencing legitimacy perceptions, social identity, immediate cooperation, and can have consequences for subsequent interactions with the police. However, with these findings in mind, it should be made clear that the quality of treatment is paramount. This benefits call-takers and police officers alike, in that both actors exist within broader systems that are resource-deficient (Davidson, 2018; Neusteter et al., 2019). As such, findings that suggest treatment outweighs resource allocation removes some of the pressure on an overburdened system to dispatch scarce resources, and suggests more attention should be paid to developing greater interpersonal skills.

As for the findings related to the mediating role of social identity, this dissertation demonstrates that procedurally just treatment is more than just a respectful tone and allowing one to tell their side of the story. Rather, it acknowledges the deep-seated need for all to feel a sense of belongingness (Baumeister & Leary, 1995)—a nuance that should be highlighted in training for call-takers and police officers. Additionally, these findings underscore the fact that procedurally unjust treatment by call-takers not only negatively impacts felt identification with the group, but also damages perceptions of legitimacy (Bradford et al., 2015). While this is consistent with past research related to the impact of the police, this study serves as the first to demonstrate similar impacts for call-takers.

Lastly, it was revealed that procedural injustice spill-over did exist between call-takers and the police. As such, it should be emphasized in training for call-takers that their citizen perceptions of them has repercussions for the police officers who respond, adding to the growing literature demonstrating that call-taker actions have direct consequences for police first responders ranging from increasing unnecessary uses of force (Gillooly, 2020; McNamarah, 2018), expanding instances of erroneous police shootings (Taylor, 2020; United States Department of Justice, 2020), influencing police assessments of call priority (Gillooly, 2021), introduced ambiguity if calls are misclassified (Simpson & Orosco, 2021), to now increasing citizen resistance and reluctance to cooperate. However, the silver lining that call-taker treatment does not irreversibly damage police ability to turn things around is also important to communicate to officers. This offers even further support for procedural justice training and application, providing a sanguine outlook to an otherwise potentially bleak situation.

Research Implications

Beyond practical considerations, there are several research implications from this study. First and foremost, this dissertation offers more empirical support to procedural justice, the process-based model, and the greater relative salience of procedural justice compared to distributive justice. Furthermore, this study extended the theoretical bounds of procedural justice in its application to a largely understudied criminal justice actor—the call-taker—extending previous work conducted by Flippin and colleagues (2019). Additionally, the findings related to social identity as a mediating variable offers greater credence and support for the group engagement model (Blader & Tyler, 2009; Tyler & Blader, 2003). This is particularly promising, as social identity serving as a mediator

suggests identity is not set in stone, but rather continues to be actively shaped in each interaction (Bradford et al., 2015). As such, future procedural justice research and applications of the process-based model should continue to consider the impact of social identity in the formation of legitimacy perceptions.

This study also extended the application of the spill-over effect. To date, previous spill-over research has largely been limited to an exclusive focus on justice-involved populations and predominantly confined to the spill-over between police and the courts. This narrow focus limits the generalizability of the findings of this research. Here, a quasi-representative sample of the United States was used, serving as a first to do so in this realm of empirical inquiry. Furthermore, the theoretical scope of spill-over was extended to focus on more front-facing aspects of the criminal justice system—the call-taker. Though, as noted, the variance explained in these models was quite small. Future research should consider other contextual factors that may impact the experienced spill-over from call-takers to the police. Indeed, perhaps taking the methodological approach a step further with audio vignettes would allow for a more nuanced approach to capturing call-taker misbehavior, and thus allowing for greater model sensitivity to spill-over.

Future research should also continue to shed light on the black box of call-taking. Relatively little is known about this criminal justice actor—a fact that is growing more concerning with the increased attention on call-taking and the criminal justice system more broadly in recent years. Indeed, with efforts to divert calls away from police and towards social services, a new level of discretion and nuance to the call-taker mandate is becoming apparent (Gillooly, 2021). This poses the potential for more power to be placed in the hands of the call-taker. With increased scrutiny on call-taker misbehavior even in

the past week (see Lenthang, 2022), greater empirical attention on call-taking is becoming all the more urgent. As noted by Simpson (2020), call-takers “should become a focal area of criminological scholarship if the field is to fully understand the nature of police work and the broader net of the criminal justice system” (p. 1539).

Study Limitations

While this study possesses several strengths (i.e., a quasi-representative sample the United States and mixed model design), it is not without limitations. First, not every dimension of procedural justice was capable of being manipulated in the vignettes. This was largely owed to concerns over compromising the believability of the hypothetical scenarios. With respectful treatment and voice being two of the more salient procedural justice concepts within the margins of a call-taker interaction, the experimental manipulations focused on varying these aspects of procedural justice. To overcome this limitation and ensure this did not threaten participant perceptions of procedural justice, ANOVA models were estimated. The findings suggest participants were capable of inferring from the manipulated properties of procedural justice those that could not be altered, but this is admittedly an imperfect approach. However, it should be noted that there exists considerable variation in the operationalization of procedural justice in past research, with other studies similarly directly measuring only some of the concepts related to procedural justice (Gau, 2013). Here, this may serve as an explanation for the methodological artifact discussed in chapter 4, though this is merely conjecture.

Another limitation of the current study is the use of vignettes. While lauded for their ability to test causal hypotheses within contexts that would prove challenging to test in a natural setting (Barter & Renold, 2000; Rossi & Nock, 1982), vignettes are not

without their shortcomings. First, owed to the hypothetical nature of vignettes, participants may project behavioral intentions that are distinct from their actual behaviors if they were to personally experience the encounter described in a vignette (Madon et al., 2022). The issue of satisficing—the “tendency for subjects to process vignette information less carefully and effectively than they would under ideal or real conditions” (Stolte, 1994, p. 727)—is a related concern of this methodologic approach. Both critiques understandably pose concerns for external validity (Aguinis & Bradley, 2014; Atzmüller & Steiner, 2010; Hughes & Huby, 2002).

However, research has demonstrated that vignettes are quite reliable in envisaging actual behavior (Kim & Hunter, 1993). Moreover, the sample in this study was restricted to only include participants who reported the vignettes as realistic and clearly imaginable, and who reported being honest and careful in their responses. This inclusion criteria suggests the remaining participants were likely able to easily place themselves within the context of the scenario described, as well as less likely to satisfice. Future studies should continue investigating the use of video and audio vignettes, as these may overcome some the weaknesses of traditional vignettes mentioned above (Hellwege et al., 2022; Solomon, 2019).

Conclusion

To date, there has been considerable research on procedural justice, social identity, legitimacy, and the consequences of these items, such as cooperation. However, the understanding of the spill-over of procedural injustice onto ensuing interactions, as well as the role and influence of 911 call-takers has not matched the pace with the larger body of empirical research. Comparatively, little is known about spill-over and call-

takers. This study has taken a significant step towards developing an empirical footing for future researchers, as well as forging a path in understanding the capacity of subsequent criminal justice actors to clean-up the spill-over. Future research should continue exploring these avenues.

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APPENDIX A
SURVEY INSTRUMENT

PROLIFIC ID

1. What is your Prolific ID? *Please note that this response should auto-fill with the correct ID*
2. Is the Prolific ID listed above correct?
3. If you selected “No” to the previous question, please enter your correct Prolific ID:

SECTION ONE

The following items give us a bit more information about you. Please indicate your level of agreement with each of the following statements.

1. Please select “Strongly Disagree” from the answer choices for this question. *(Attention Check)*
2. I feel angry most of the time. *(Negative Emotions: Anger)*
3. I feel angry about what I have to look forward to. *(Negative Emotions: Anger)*
4. I am pretty angry about things these days. *(Negative Emotions: Anger)*
5. My feelings of anger sometimes keep me from making good decisions. *(Negative Emotions: Anger)*
6. More people than usual are beginning to make me feel angry. *(Negative Emotions: Anger)*
7. My feelings of anger leave me less interested in sex than I used to be. *(Negative Emotions: Anger)*
8. I feel pretty worthless right now. *(Negative Emotions: Depression)*
9. I often get bored. *(Negative Emotions: Depression)*
10. I prefer to stay home rather than going out and doing things. *(Negative Emotions: Depression)*
11. I am basically satisfied with my life. *(Negative Emotions: Depression)*
12. I often feel helpless. *(Negative Emotions: Depression)*
13. I do certain things that are bad for me, if they are fun. *(Impulsivity)*

14. Pleasure and fun sometimes keep me from getting work done. (*Impulsivity*)
15. Sometimes I can't stop myself from doing something, even if I know it is wrong. (*Impulsivity*)
16. I often act without thinking through all the alternatives. (*Impulsivity*)
17. I am good at resisting temptation. (*Restraint*)
18. I have a hard time breaking bad habits. (*Restraint*)
19. I wish I had more self-discipline. (*Restraint*)
20. People would say that I have iron self-discipline. (*Restraint*)

SECTION TWO

Now we are going to switch gears a bit. Please read the following short story depicting a hypothetical 911 call. After doing so, please answer the questions that follow by selecting the response that most closely aligns with your personal opinion and what you would do if you were in a similar situation.

As you are leaving a public park, you notice someone sitting in a white Honda in the parking lot, slumped over the wheel. You walk over and knock on their window to check on them. They wake up and look at you. You ask if they're okay and whether they need help, but they rest their head against the steering wheel and close their eyes. Out of concern for their health and safety, as well as the potential for them to drive while impaired, you call 911. Upon answering, the call-taker asks you what's going on. You answer by saying "There is a guy sitting in a car. I think he may be intoxicated. He's parked in the parking lot slumped over the steering wheel. I tried to wake him up, but I don't know what's wrong with him." The call-taker asks for the driver's basic demographic information, which you describe. After detailing the situation, the call-taker responds *in a calming tone and says, "Okay, I will send a patrol car your way to check on him. Do you have any immediate concerns about your safety?"* | *in a sarcastic tone and says, "And what exactly do you want us to do about that?"* You say that you're just worried and want the police to come check on him and determine if he is okay to drive. *The call-taker responds by saying, "I completely understand. Please stay on the line with me until police arrive"* | *However, the call-taker cuts you off and says, "Yeah, yeah, yeah, someone is on their way. Just tell them when they get there. Don't hang up until then. Understand?"* You ask how long it will take the police to arrive. The call-taker says, "they should be there in few minutes" | "I don't know."

21. I have a moral responsibility to accept the decisions of the call-taker in the short story, even if I think they are wrong. (*Obligation to Obey Call-taker*)
22. I would do what the call-taker in the short story tells me to do because it is the right thing to do. (*Obligation to Obey Call-taker*)
23. I would feel a moral duty to do what the call-taker in the short story tells me to do, even if I did not like the way they talked to me. (*Obligation to Obey Call-taker*)
24. I think the call-taker in the short story is trustworthy. (*Trust in Call-taker*)
25. I trust the call-taker in the short story to make the right decisions. (*Trust in Call-taker*)
26. I trust the intentions of the call-taker in the short story. (*Trust in Call-taker*)
27. I think the call-taker in the short story has similar values to myself. (*Normative Alignment with Call-taker*)
28. I think the call-taker in the short story acted in a way that is consistent with my own ideas about what is right and wrong. (*Normative Alignment with Call-taker*)
29. I think the call-taker in the short story would stand up for values that are important to me. (*Normative Alignment with Call-taker*)
30. How willing would you be to remain on the line with the call-taker in the short story? (*Call-taker Immediate Cooperation*)
31. How willing would you be to answer additional questions from the call-taker in the short story? (*Call-taker Immediate Cooperation*)
32. How willing would you be to do what the call-taker in the short story asks you to do while waiting for the police? (*Call-taker Immediate Cooperation*)
33. How willing would you be to call 911 in the future if something like this situation happened to you again? (*Call-taker Future Cooperation*)
34. How willing would you be to call 911 in the future if you were to witness a serious (felony) crime? (*Call-taker Future Cooperation*)
35. How willing would you be to call 911 in the future if you were to witness a minor (misdemeanor) crime? (*Call-taker Future Cooperation*)
36. Overall, how satisfied were you with the way the call-taker responded to your emergency? (*Call-taker Encounter Satisfaction*)

37. How satisfied were you with the quality of service provided by the call-taker? (*Call-taker Encounter Satisfaction*)
38. How would you rate the job the call-taker did responding to your call for service? (*Call-taker Encounter Satisfaction*)
39. How willing would you be to provide a witness statement to the police officer who arrives on the scene? (*Police Cooperation*)
40. How willing would you be to stick around at the scene if the police officer who arrives asked you to do so voluntarily? (*Police Cooperation*)
41. How willing would you be to do what the police officer who arrives on the scene asks you to do? (*Police Cooperation*)
42. The interaction in the short story made me feel like a valued member of my community. (*Social Identity*)
43. The interaction in the short story made me feel like an honest, law-abiding citizen. (*Social Identity*)
44. The interaction in the short story made me feel proud to be a part of my community. (*Social Identity*)
45. The call-taker in the short story treated me with dignity and respect. (*Procedural Justice Manipulation Check*)
46. The call-taker in the short story listened to what I had to say. (*Procedural Justice Manipulation Check*)
47. The call-taker in the short story acted in a neutral and unbiased fashion. (*Procedural Justice Manipulation Check*)
48. The call-taker in the short story was clearly concerned with my well-being. (*Procedural Justice Manipulation Check*)
49. The response time estimated by the call-taker in the short story for a police officer to arrive on scene was appropriate. (*Distributive Justice Manipulation Check*)
50. The response time estimated by the call-taker in the short story for a police officer to arrive on scene was reasonable. (*Distributive Justice Manipulation Check*)

51. How did the call-taker in the short story make you feel? (Choose all that apply)
(*Emotional Response*)

Angry

Proud

Resentful

Fearful

Anxious

Calm

Appreciated

Depressed

Frustrated

52. How realistic was the short story? (*Quality assurance*)

53. How clearly could you imagine the short story? (*Quality assurance*)

SECTION THREE

Now, please read the following short story depicting the hypothetical police response to the 911 call you previously read about. Then, answer the questions that follow by indicating the response that most closely aligns with your personal opinion and how you would act if in a similar situation.

After a few minutes / 45 minutes, the police arrive. You walk over to explain the situation. You point to the white Honda the man is sitting in and explain that you are concerned for his wellbeing, as well as whether he is fit to drive. The officer responds by saying, "Understood. Were you able to talk to him at all?" You tell the officer that you knocked on his window and attempted to talk to him but that he dozed off again. You reiterate that you are unsure whether he is drunk or needs medical attention. The officer responds by saying "Yeah, I get that. I think you did the right thing in calling us. I'll go see if I can chat with him." | "Right. See, I'm already having a bad day, so I really don't feel like dealing with this petty shit. But I'll go see if I can talk to the guy." You say thank you and ask if the officer wants you to stick around. The officer says, "Can you please hang around for a few minutes? I may have some more questions. Either way, thank you for doing your part" | The officer scoffs and interrupts you by saying "I think we can handle it from here. That's why you called us, right? But you need to hang around. I may need to talk to you again."

54. I have a moral responsibility to accept the decisions of the police officer in the short story, even if I think they are wrong. (*Obligation to Obey Officer*)

55. I would do what the police officer in the short story tells me to do because it is the right thing to do. (*Obligation to Obey Officer*)

56. I would feel a moral duty to do what the police officer in the short story tells me to do, even if I did not like the way they talked to me. (*Obligation to Obey Officer*)
57. I think the police officer in the short story is trustworthy. (*Trust in Officer*)
58. I trust the police officer in the short story to make the right decisions. (*Trust in Officer*)
59. I trust the intentions of the police officer in the short story. (*Trust in Officer*)
60. I think the police officer in the short story has similar values to myself. (*Normative Alignment with Officer*)
61. I think the police officer in the short story acted in a way that is consistent with my own ideas about what is right and wrong. (*Normative Alignment with Officer*)
62. I think the police officer in the short story would stand up for values that are important to me. (*Normative Alignment with Officer*)
63. How willing would you be to do what the police officer asks you to do? (*Police Immediate Cooperation*)
64. How willing would you be to stick around at the scene if the police officer asked you to do so voluntarily? (*Police Immediate Cooperation*)
65. How willing would you be to provide a witness statement to the police officer? (*Police Immediate Cooperation*)
66. How willing would you be to identify a suspect if asked by the police to do so in the future? (*Police Future Cooperation*)
67. How willing would you be to report a crime to the police in the future? (*Police Future Cooperation*)
68. How willing would you be to assist with a police investigation in the future? (*Police Future Cooperation*)
69. Overall, how satisfied were you with the way the police officer responded to your emergency? (*Police Encounter Satisfaction*)
70. How satisfied were you with the quality of service provided by the police officer who responded? (*Call-taker Encounter Satisfaction*)
71. How would you rate the job the police officer did responding to your call for service? (*Call-taker Encounter Satisfaction*)

72. The interaction in the short story made me feel like a valued member of my community. (*Social Identity*)
73. The interaction in the short story made me feel like an honest, law-abiding citizen. (*Social Identity*)
74. The interaction in the short story made me feel proud to be a part of my community. (*Social Identity*)
75. The police officer in the short story treated me with dignity and respect. (*Procedural Justice Manipulation Check*)
76. The police officer in the short story listened to what I had to say. (*Procedural Justice Manipulation Check*)
77. The police officer in the short story acted in a neutral and unbiased fashion. (*Procedural Justice Manipulation Check*)
78. The police officer in the short story was clearly concerned with my well-being. (*Procedural Justice Manipulation Check*)
79. The response time of the police officer in the short story to arrive on scene was appropriate. (*Distributive Justice Manipulation Check*)
80. The response time of the police officer in the short story to arrive on scene was reasonable. (*Distributive Justice Manipulation Check*)
81. How did the police officer make you feel? (Check all that apply) (*Emotional Response*)

Angry

Proud

Resentful

Fearful

Anxious

Calm

Appreciated

Depressed

Frustrated

82. How realistic was the short story? (*Quality Assurance*)
83. How clearly could you imagine the short story? (*Quality Assurance*)

SECTION FOUR

Now for something a bit different. Below you will find a list of statements. Please read each statement carefully and decide if that statement describes you or not. If it describes you, select “yes”; if not, select “no”. [*SOCIAL DESIRABILITY SCALE*]

1. I sometimes litter.
2. I always admit my mistakes openly and face the potential negative consequences.
3. In traffic I am always polite and considerate of others.
4. I always accept others' opinions, even when they don't agree with my own.
5. I take out my bad moods on others now and then.
6. There has been an occasion when I took advantage of someone else.
7. In conversations I always listen attentively and let others finish their sentences.
8. I never hesitate to help someone in case of emergency.
9. When I have made a promise, I keep it – no ifs, ands, or buts.
10. Please select “No” from the answer choices for this question.
11. I occasionally speak badly of others behind their back.
12. I would never live off other people.
13. I always stay friendly and courteous with other people, even when I am stressed out.
14. During arguments I always stay objective and matter-of-fact.
15. There has been at least one occasion when I failed to return an item that I borrowed.
16. I always eat a healthy diet.
17. Sometimes I only help because I expect something in return.

NARRATIVE CHECKS

Now, please answer the following questions about the short stories you read earlier in the survey.

1. In the first short story you read, who did you interact with?
2. In the second short story you read, who did you interact with?
3. In the first short story you read, where were you?
4. In the second short story you read, why were the police called?

SECTION FIVE

Finally, for statistical purpose, please complete the following demographic items.

1. What is your gender?
2. What year were you born?
3. Are you of Hispanic, Latino/a/x, or of Spanish origin?
 - a. If you answered, “some other race, ethnicity, or origin,” please specify.
4. What is your racial background?
 - a. If you answered “other” to race, please specify.
5. Are you a resident of the United States?
6. What is your yearly income level?
7. What is the highest level of education you have reached?
8. How would you classify your current occupation in the scale below?
9. Are you a homeowner or renter?
10. How long have you lived in your current home?
11. What is your marital status?
12. Are you fluent in English?

13. Have you had any personal contact with a 911 call-taker in the past 12 months?

a. Please describe your encounter with the call-taker.

14. Have you had any personal contact with the police in the past 12 months?

a. Please think about that contact or if there were more than one contact, the most recent one. Which of the following best describes your contact with the police?

b. Please describe your encounter with the police.

SECTION SIX

Almost done! PLEASE answer the following questions honestly. YOU WILL BE PAID REGARDLESS OF HOW YOU ANSWER.

15. How honest were you in answering the questions?

16. When going through the survey, how carefully did you read the questions?

APPENDIX B
BALANCE TEST RESULTS

Table B1
Balance Tests

	Call-taker procedurally just (%)	Call-taker procedurally unjust (%)	Call-taker distributively just (%)	Call-taker distributively unjust (%)	Police officer procedurally just (%)	Police officer procedurally unjust (%)	Police officer distributively just (%)	Police officer distributively unjust (%)
Gender (N = 1,420)								
Men	46.65	48.86	46.93	48.58	47.17	48.32	47.46	48.03
Women	51.12	49.43	51.12	49.43	51.42	49.16	50.14	50.42
Non-binary/third gender	1.82	1.56	1.40	1.99	1.27	2.10	1.83	1.55
Prefer not to say	0.42	0.14	0.56	0.00	0.14	0.42	0.56	0.00
χ^2		1.67		5.07		2.87		4.20
Age (N = 1,419)								
19-27	17.60	18.21	18.44	17.35	17.85	17.95	18.05	17.75
28-37	18.44	20.48	19.83	19.06	17.28	21.60	18.48	20.42
38-47	15.92	17.50	16.48	16.93	17.14	16.27	17.49	15.92
48-57	18.30	14.94	17.60	15.65	16.71	16.55	16.50	16.76
58+	29.75	28.88	27.65	31.01	31.02	27.63	29.48	29.15
χ^2		3.87		2.56		4.96		1.26
Race (N = 1,420)								
American Indian or Alaskan Native	0.70	0.71	0.84	0.57	0.85	0.56	0.85	0.56
Asian	6.01	6.11	6.42	5.68	5.81	6.30	5.07	7.04
Black or African American	11.87	12.64	12.85	11.65	12.32	12.18	14.37	10.14
Native Hawaiian or Other Pacific Islander	0.00	0.14	0.00	0.14	0.14	0.00	0.00	0.14
White	77.23	74.86	75.84	76.28	76.49	75.63	75.07	77.04
Other	0.98	0.43	0.28	1.14	0.71	0.70	0.70	0.70
Mixed	2.93	3.84	3.07	3.69	3.54	3.22	2.96	3.80
Prefer not to say	0.28	1.28	0.70	0.85	0.14	1.40	0.99	0.56
χ^2		8.42		6.35		8.99		10.60
Ethnicity (N = 1,417)								
Not of Hispanic, Latino/a/x, or Spanish origin	93.16	93.72	92.71	94.18	94.61	92.28	93.66	93.21

Yes, of Hispanic, Latino/a/x, or Spanish origin	6.56	5.71	6.87	5.40	5.39	6.88	5.77	6.51
Prefer not to say	0.28	0.57	0.42	0.43	0.00	0.84	0.56	0.28
χ^2	1.15		1.34		7.43*		0.97	
Education (N = 1,417)								
Less than high school	1.12	1.42	1.40	1.14	0.99	1.55	1.13	1.41
High school equivalent diploma	12.18	13.09	10.77	14.53	13.88	11.39	11.74	13.52
Some college	22.41	21.19	24.20	19.37	22.24	21.38	23.62	20.00
Associate degree	10.08	8.96	10.21	8.83	10.06	9.00	9.48	9.58
Bachelor's degree	38.24	37.41	37.62	38.03	37.25	38.40	36.07	39.58
Master's, professional, or doctorate degree	15.97	17.92	15.80	18.09	15.58	18.28	17.96	15.92
χ^2	2.05		9.75		4.78		5.27	
Marital status (N = 1,419)								
Never married	32.73	32.67	34.13	31.25	30.35	35.01	34.13	31.27
Not married, but in long-term relationship	14.27	16.90	15.94	15.20	15.60	15.55	14.67	16.48
Married	38.04	37.07	36.64	38.49	38.72	36.41	38.22	36.90
Divorced	12.87	10.94	11.47	12.36	13.05	10.78	11.28	12.54
Widowed	2.10	2.41	1.82	2.70	2.27	2.24	1.69	2.82
χ^2	2.94		2.80		4.39		4.26	
Yearly income (N = 1,417)								
Less than \$15,000	20.98	20.37	22.13	19.20	22.24	19.13	20.08	21.27
\$15,000 - \$34,999	20.70	22.79	22.27	21.19	21.39	22.08	20.51	22.96
\$35,000 - \$49,999	17.34	12.82	15.55	14.65	15.44	14.77	17.11	13.10
\$50,000 - \$74,999	17.76	20.80	17.65	20.91	18.41	20.11	19.80	18.73
\$75,000 or more	23.22	23.22	22.41	24.04	22.52	23.91	22.49	23.94
χ^2	7.27		4.21		2.67		5.53	
Occupation classification (N = 1,420)								
Unemployed	33.52	34.23	33.80	33.95	34.28	33.47	32.11	35.63

Low-skilled manual labor	10.89	11.51	12.15	10.23	12.04	10.36	11.83	10.56
High-skilled manual labor	7.68	7.24	8.24	6.68	8.64	6.30	8.03	6.90
Professional labor	47.91	47.02	45.81	49.15	45.04	49.86	48.03	46.90
χ^2		0.32		3.17		5.29		2.51
Social Desirability (N = 1,398)								
Very Low	9.36	7.79	8.70	8.46	8.48	8.69	7.74	9.43
Low	15.46	16.02	14.69	16.79	16.24	15.24	14.33	17.14
Average	61.99	63.06	63.05	61.98	64.08	60.97	63.75	61.29
High	13.19	13.13	13.55	12.77	11.21	15.10	14.18	12.14
χ^2		1.14		1.22		4.80		4.37

* $p < 0.05$

APPENDIX C

PRINCIPAL COMPONENTS ANALYSES RESULTS

Table C1*Principal Components Analysis for Call-taker Vignette Outcomes*

Scales and items	Factor								
	I	II	III	IV	V	VI	VII	VIII	IX
<i>I Call-taker Procedural Justice</i>									
1	0.96								
2	0.79								
3	0.93								
4	0.94								
<i>II Call-taker Distributive Justice</i>									
5		0.96							
6		0.96							
<i>III Normative Obligation to Obey the Call-taker</i>									
7			0.65						
8			0.75						
9			0.79						
<i>IV Institutional Trust of Call-taker</i>									
10				0.89					
11				0.92					
12				0.92					
<i>V Normative Alignment with Call-taker</i>									
13					0.93				
14					0.88				
15					0.91				
<i>VI Immediate Cooperation with Call-taker</i>									
16						0.88			
17						0.80			
18						0.85			
<i>VII Future Cooperation with Call-taker</i>									
19							0.80		
20							0.69		
21							0.78		
<i>VIII Anticipated Cooperation with Police</i>									
22								0.82	
23								0.85	
24								0.82	
<i>IX Call-taker Social Identity</i>									
25									0.91
26									0.78
27									0.90
Eigenvalues	3.30	1.84	1.62	2.48	2.44	2.14	1.73	2.07	2.25

Note. Item numbers presented in this table correspond to those presented in Table 5.

Table C2
Principal Components Analysis for Police Vignette Outcomes

Scales and items	Factor							
	I	II	III	IV	V	VI	VII	VIII
<i>I Police Procedural Justice</i>								
1	0.96							
2	0.83							
3	0.94							
4	0.91							
<i>II Police Distributive Justice</i>								
5		0.97						
6		0.97						
<i>III Normative Obligation to Obey the Police</i>								
7			0.79					
8			0.81					
9			0.87					
<i>IV Institutional Trust of Police</i>								
10				0.95				
11				0.94				
12				0.95				
<i>V Normative Alignment with Police</i>								
13					0.95			
14					0.92			
15					0.94			
<i>VI Immediate Cooperation with Police</i>								
16						0.90		
17						0.91		
18						0.88		
<i>VII Future Cooperation with Police</i>								
19							0.91	
20							0.90	
21							0.91	
<i>VIII Police Social Identity</i>								
22								0.95
23								0.84
24								0.95
Eigenvalues	3.32	1.87	2.04	2.69	2.63	2.40	2.47	2.52

Note. Item numbers presented in this table correspond to those presented in Table 6.

APPENDIX D
SENSITIVITY ANALYSES

Table D1

OLS Regression Models for Social Identity and Call-taker Legitimacy with Control Variables (N = 1,392)

Variables	Social Identity			Call-taker Legitimacy					
	Model 1			Model 2			Model 3		
	<i>b</i>	β	<i>t</i> -test	<i>b</i>	β	<i>t</i> -test	<i>b</i>	β	<i>t</i> -test
	(s.e.)			(s.e.)			(s.e.)		
Procedural Injustice	-1.03 (0.04)	-	25.20***	-1.24 (0.03)	-	42.90***	-0.93 (0.04)	-0.57	-24.46***
Distributive Justice	0.10 (0.04)	0.05	2.49*	0.15 (0.03)	0.09	5.29***	0.12 (0.03)	0.07	4.65***
Social Identity	---	---	---	---	---	---	0.29 (0.02)	0.33	13.84***
Male	0.01 (0.04)	0.01	0.28	0.02 (0.03)	0.01	0.57	0.01 (0.03)	0.01	0.50
Age	0.00 (0.00)	0.05	2.11*	0.00 (0.00)	0.03	1.64	0.00 (0.00)	0.02	0.85
White	-0.15 (0.05)	-	-3.13**	0.02 (0.03)	0.01	0.50	0.06 (0.03)	0.03	1.97*
Hispanic	-0.05 (0.08)	-	-0.58	-0.11 (0.06)	-	-1.80	-0.09 (0.05)	-0.03	-1.75
Education	0.00 (0.02)	0.00	0.12	-0.02 (0.01)	-	-1.39	-0.02 (0.01)	-0.03	-1.56
Married	0.13 (0.05)	0.07	2.73**	0.02 (0.03)	0.01	0.56	-0.02 (0.03)	-0.01	-0.67
Yearly Income	0.02 (0.02)	0.03	1.04	0.00 (0.01)	0.00	0.08	-0.00 (0.01)	-0.01	-0.39
Occupation Classification	-0.02 (0.02)	-	-1.43	0.01 (0.01)	0.01	0.60	0.01 (0.01)	0.02	1.31
Social Desirability	0.03 (0.01)	0.12	5.29***	0.02 (0.00)	0.09	4.56***	0.01 (0.00)	0.05	2.71**
F		70.63***			186.50***			266.27***	
R ²		0.34			0.58			0.65	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

Table D2

OLS Regression Models for Social Identity and Police Officer Legitimacy with Control Variables (N = 1,392)

Variables	Social Identity			Police Officer Legitimacy					
	Model 1			Model 2			Model 3		
	<i>b</i>	β	<i>t</i> -test	<i>b</i>	β	<i>t</i> -test	<i>b</i>	β	<i>t</i> -test
	(s.e.)			(s.e.)			(s.e.)		
Procedural Injustice	-1.57 (0.04)	-	-	-1.51 (0.03)	-	-	-0.83 (0.05)	-0.43	-16.13***
Distributive Justice	0.04 (0.04)	0.73	40.44***	0.04 (0.03)	0.02	1.21	0.02 (0.03)	0.01	0.73
Social Identity	---	---	---	---	---	---	0.43 (0.02)	0.48	17.83***
Male	0.05 (0.04)	0.03	1.39	0.07 (0.03)	0.04	2.36*	0.05 (0.03)	0.03	1.90
Age	0.00 (0.00)	0.06	3.08**	0.01 (0.00)	0.12	6.84***	0.01 (0.00)	0.09	5.79***
White	-0.13 (0.05)	-	-2.73**	-0.02 (0.04)	-	-0.62	0.03 (0.03)	0.02	1.03
Hispanic	-0.16 (0.08)	-	-2.07*	-0.05 (0.06)	-	-0.82	0.02 (0.05)	0.00	0.32
Education	0.01 (0.02)	0.01	0.35	-0.00 (0.01)	-	-0.23	-0.01 (0.01)	-0.01	-0.51
Married	0.10 (0.04)	0.05	2.32*	0.08 (0.03)	0.04	2.49*	0.04 (0.03)	0.02	1.36
Yearly Income	0.01 (0.02)	0.01	0.53	0.00 (0.01)	0.00	0.11	-0.00 (0.01)	-0.00	-0.20
Occupation Classification	-0.01 (0.02)	-	-0.75	0.00 (0.01)	0.00	0.01	0.01 (0.01)	0.01	0.50
Social Desirability	0.03 (0.01)	0.11	5.66***	0.02 (0.00)	0.09	5.32***	0.01 (0.00)	0.04	2.74**
F		197.69***			279.37***			453.86***	
R ²		0.56			0.65			0.76	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed test).

Table D3

OLS Regression Models for Immediate Cooperation with the Call-taker with Control Variables (N = 1,392)

Variables	Immediate Cooperation with the Call-taker					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-0.62 (0.04)	-0.40	-16.51***	-0.43 (0.03)	-0.28	-12.58***
Distributive Justice	0.15 (0.04)	0.09	3.91***	0.11 (0.03)	0.07	3.37**
Normative Obligation to Obey the Call-taker	--- ---	---	---	0.47 (0.03)	0.46	16.53***
Male	-0.13 (0.04)	-0.09	-3.55***	-0.12 (0.03)	-0.07	-3.54***
Age	0.00 (0.00)	0.07	2.77**	0.00 (0.00)	0.06	2.59*
White	0.15 (0.05)	0.08	3.15**	0.13 (0.04)	0.07	3.31**
Hispanic	-0.04 (0.08)	-0.01	-0.48	-0.02 (0.07)	-0.01	-0.33
Education	-0.02 (0.02)	-0.04	-1.57	-0.01 (0.01)	-0.02	-0.82
Married	-0.01 (0.04)	-0.01	-0.22	-0.00 (0.04)	-0.00	-0.10
Yearly Income	-0.02 (0.02)	-0.03	-1.04	-0.02 (0.01)	-0.03	-1.16
Occupation Classification	0.03 (0.02)	0.05	1.78	0.02 (0.01)	0.04	1.58
Social Desirability	0.03 (0.01)	0.12	4.82***	0.01 (0.00)	0.07	2.99**
	F	38.13***			71.34***	
	R ²	0.21			0.40	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Table D4*OLS Regression Models for Future Cooperation with the Call-taker with Control Variables (N = 1,392)*

Variables	Future Cooperation with the Call-taker					
	Model 1			Model 2		
	<i>b</i>	β	<i>t</i> -test	<i>b</i>	B	<i>t</i> -test
	(s.e.)			(s.e.)		
Procedural Injustice	-0.39 (0.04)	-0.27	-10.81***	-0.29 (0.04)	-0.20	-7.81***
Distributive Justice	0.03 (0.04)	0.02	0.94	0.01 (0.03)	0.01	0.37
Normative Obligation to Obey the Call-taker	--- ---	---	---	0.28 (0.03)	0.29	9.96***
Male	-0.12 (0.04)	-0.08	-3.32**	-0.11 (0.04)	-0.08	-3.18**
Age	0.01 (0.00)	0.15	5.89***	0.01 (0.00)	0.15	5.83***
White	0.07 (0.05)	0.04	1.62	0.07 (0.04)	0.04	1.53
Hispanic	0.01 (0.08)	0.00	0.09	0.02 (0.07)	0.01	0.22
Education	-0.02 (0.02)	-0.04	-1.37	-0.01 (0.02)	-0.03	-0.90
Married	0.03 (0.04)	0.02	0.80	0.04 (0.04)	0.02	0.91
Yearly Income	0.02 (0.02)	0.04	1.12	0.02 (0.02)	0.04	1.19
Occupation Classification	0.01 (0.02)	0.02	0.53	0.00 (0.01)	0.01	0.27
Social Desirability	0.03 (0.01)	0.16	6.15***	0.02 (0.00)	0.12	4.99***
	F	23.47***			30.84***	
	R ²	0.14			0.22	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Table D5

OLS Regression Models for Immediate Cooperation with the Police Officer with Control Variables (N = 1,392)

Variables	Immediate Cooperation with the Police Officer					
	Model 1			Model 2		
	<i>b</i> (s.e.)	β	<i>t</i> -test	<i>b</i> (s.e.)	β	<i>t</i> -test
Procedural Injustice	-0.81 (0.04)	-0.47	-20.72***	-0.30 (0.03)	-0.18	-8.71***
Distributive Justice	0.16 (0.04)	0.09	4.07***	0.12 (0.03)	0.07	4.22***
Normative Obligation to Obey the Call-taker	--- ---	---	---	0.63 (0.02)	0.65	27.81***
Male	-0.07 (0.04)	-0.04	-1.88	-0.08 (0.03)	-0.05	-2.65**
Age	0.01 (0.00)	0.15	6.13***	0.00 (0.00)	0.05	2.69**
White	0.07 (0.05)	0.04	1.53	0.06 (0.04)	0.03	1.52
Hispanic	-0.00 (0.08)	-0.00	-0.05	-0.01 (0.06)	-0.00	-0.18
Education	-0.00 (0.02)	-0.00	-0.03	0.01 (0.01)	0.01	0.68
Married	0.08 (0.04)	0.05	1.92	0.01 (0.03)	0.01	0.30
Yearly Income	0.00 (0.02)	0.00	0.13	-0.00 (0.01)	-0.00	-0.02
Occupation Classification	-0.00 (0.02)	-0.00	-0.17	-0.00 (0.01)	-0.01	-0.33
Social Desirability	0.02 (0.01)	0.10	4.00***	0.00 (0.00)	0.02	0.87
	F	51.65***			148.08***	
	R ²	0.29			0.60	

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Table D6

OLS Regression Models for Future Cooperation with the Police Officer with Control Variables (N = 1,392)

Variables	Future Cooperation with the Police Officer					
	Model 1			Model 2		
	<i>b</i>	β	<i>t</i> -test	<i>b</i>	B	<i>t</i> -test
	(s.e.)			(s.e.)		
Procedural Injustice	-0.68 (0.04)	-0.39	-16.52***	-0.29 (0.04)	-0.17	-7.04***
Distributive Justice	0.05 (0.04)	0.03	1.16	0.02 (0.04)	0.01	0.59
Normative Obligation to Obey the Call-taker	--- ---	---	---	0.48 (0.03)	0.48	17.31***
Male	-0.06 (0.04)	-0.04	-1.52	-0.07 (0.04)	-0.04	-1.82
Age	0.01 (0.00)	0.19	7.67***	0.01 (0.00)	0.12	5.43***
White	0.09 (0.05)	0.04	1.75	0.07 (0.04)	0.04	1.69
Hispanic	-0.07 (0.09)	-0.02	-0.77	-0.08 (0.08)	-0.02	-0.92
Education	0.01 (0.02)	0.01	0.43	0.01 (0.02)	0.02	0.92
Married	0.08 (0.05)	0.05	1.79	0.03 (0.04)	0.02	0.65
Yearly Income	0.02 (0.02)	0.04	1.45	0.02 (0.01)	0.04	1.53
Occupation Classification	-0.00 (0.02)	-0.00	-0.05	-0.00 (0.01)	-0.00	-0.13
Social Desirability	0.03 (0.01)	0.14	5.84***	0.02 (0.01)	0.08	3.73***
	F	44.25***		74.56***		
	R ²	0.24		0.42		

Note. Entries are unstandardized regression coefficients (*b*), standardized regression coefficients (β), robust standard errors in parentheses (s.e.), and test statistics (*t*-test). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).