

**Procedural Justice in the Connecticut Correctional System:
An Exploration of Correlates and Modifications through an Intervention Program**

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Abstract

The theory of procedural justice suggests that individuals care as much about the means by which they are treated in an adversarial situation as they do about the actual outcome (Thibaut & Walker, 1975). In the context of the criminal justice system, evidence suggests that increasing perceptions of procedural justice for those in the system will increase the likelihood that they will view the system as legitimate, which in turn results in lower rates of recidivism. Other evidence extends this logic into the context of corrections, as perceptions of fairness within a prison system may affect subsequent behavior after release. The current study attempts to determine which individual factors relate to perceptions of procedural justice for both inmates and correctional officers (COs), and found that both behavioral and personality factors of COs correlate with perceptions of procedural justice, while factors related to the correctional environment may be associated with perceptions of procedural justice for both inmates and COs. Additionally, the current study examined perceptions of procedural justice in a special unit dedicated to rehabilitating young offenders, and found that there were higher perceptions of procedural justice for both inmates and COs in this unit compared to their counterparts in the general population. Avenues for further research and implications for correctional policy are discussed.

Keywords: procedural justice; fairness; corrections; T.R.U.E. Unit.

There are over six million individuals in the United States that are currently supervised by adult correctional systems (Kaeble & Cowhig, 2018). Approximately two percent of the U.S. population is being held in prisons, jails, or is on a form of probation or parole. There are many ways to assess the efficacy of these correctional systems, including observing the rate of recidivism, or the tendency of a convicted criminal to reoffend upon their release (Seiter & Kadela, 2003). Given that reducing the rate of recidivism is one of the ultimate objectives of the correctional system, it is important to consider factors within the system that may contribute to reducing reoffending rates.

One such factor is the principle of *procedural justice*. The basic principle of procedural justice suggests that individuals care as much about the means by which they are treated in an adversarial situation as they do about the actual outcome (Thibaut & Walker, 1975). That is, individuals care about the fairness of a system as much as they care about their outcome within the system. Further studies have suggested that adults define procedural justice, or the perceived “fairness” of procedures, by considering four factors (Fagan & Piquero, 2007). These factors include the extent to which the individual has a voice to express concerns or other opinions, the neutrality and fact-based decision-making of authority figures, the respectfulness of interpersonal communication, and the extent to which they believe the authority figure(s) are acting with a caring motive with respect to the individual.

The principle that the fairness of a system is equally important to individuals as any outcome has been replicated in numerous contexts, including with health-care professionals (Folger & Cropanzano, 1998), employee engagement in the workplace (Tyler & Blader, 2013), and in tort and contract cases in a district court (Lind et al., 1990). In the current context, the theory of procedural justice suggests that if individuals under the purview of the criminal justice

system believe that the system is more procedurally fair, then they are more likely to view the system as legitimate (Tyler, 1990, 2003). As a result, they are less likely to reoffend, reducing the recidivism rate upon release from the system (Beijersbergen et al., 2016).

This theory, which ultimately links perceptions of procedural justice to future rates of recidivism, has empirical support across different domains within the criminal justice system. For example, there is evidence suggesting that trust in the police is a powerful predictor of perceived legitimacy, which can then predict compliance with the authority of the police (Hough et al., 2010). Perceived legitimacy, in the context of criminal justice, is defined as the belief by the public that the courts, police, and other authorities in the criminal justice system are entitled to make decisions within these systems (Skogan & Frydl, 2004). This study found that individuals are more likely to accept the role of the police and court system if they believe that the police, courts, and laws are legitimate authorities. Another study by Fagan & Piquero (2007) revealed that in a sample of adolescents between 14 and 18 years of age, perceived legitimacy was a significant predictor of decreased self-reported offending, while cynicism of the system was a predictor of increased self-reported offending.

The connection between perceived legitimacy and positive behavioral outcomes extends beyond just rates of recidivism. Some individuals in heavily-policed areas, for example, are likely to have more interactions with members of law enforcement, even if they are not incident to an arrest (e.g. patrolling, questioning, dispersing groups). Studies concentrated in individual police jurisdictions have found that in addition to lowering crime rates, individuals who perceived the police as more legitimate, and therefore more entitled to be obeyed, were more likely to comply with police and have more tranquil interactions with them (Bond & Gow, 1996; Dai, Frank, & Sun, 2011).

There are also several proposed mechanisms that attempt to form a nexus between perceptions of legitimacy and the positive outcomes exhibited across these samples. One such mechanism with considerable empirical support is the role of emotions in mediating the effect of procedural justice on subsequent compliance of laws. For example, Murphy & Tyler (2008) showed that more positive emotional reactions to perceived justice correlated with increased compliance, while more negative emotional reactions had the opposite effect. Similarly, in a workplace environment, decreased procedural justice was associated with more negative affect in response, and an increased likelihood to leave the organization (VanYperen, Hagedoorn, Zweers, & Postma, 2000).

The series of studies described above have led to the understanding that increased perceptions of procedural justice within the context of the criminal justice system predict a greater belief in the legitimacy of those systems, which then predicts lower reoffending rates. There is, however, evidence in the growing body of literature that runs counter to this theory. For example, the study conducted by Fagan & Piquero (2007) cited above revealed an association between perceived legitimacy and lower reoffending rates, but it also revealed that within the juvenile sample of the study, more fair treatment within the criminal justice system (as perceived by the juveniles) was associated with greater subsequent aggressive offending. That is, more fair treatment corresponded with more aggressive acts of recidivism. This relationship has not been replicated in adult offenders, and while not conclusive, this association suggests that juveniles might not be as responsive to the effects of procedural justice described above.

The limitations of the procedural justice to reduced recidivism model extend into other contexts as well. For example, in a study of California street stops, more fair police practices were associated with higher rates of acceptance of the outcome of the stop, but 13% of those who

believed they were treated fairly still failed to accept the outcome (Tyler & Wakslak, 2004). Additionally, in a sample of DUI offenders, higher perceptions of legitimacy of the police were associated with lower reoffending rates, consistent with previous research described above, but approximately 4% of the those who believed the police to be legitimate did recidivate at some point (Tyler, Sherman, Strang, Barnes, & Woods, 2007).

These studies illustrate that while the relationship between perceptions of procedural justice and the rate of recidivism has been replicated, it may not be applicable in all circumstances related to criminal justice. In fact, it may be possible that the relationship is entirely context-dependent, and while it may prove to exist in some contexts of interactions with authority figures, it may not apply in others. Thus, attention may be turned to one specific context of our criminal justice system in which interactions between authority figures and those in the system occur multiple times every day: correctional settings.

Procedural Justice in Correctional Settings

Every day, a large majority of individuals in both state and federal correctional systems will interact with authority figures: corrections officers, prison staff, probation officers, or parole boards (Kaeble & Cowhig, 2018). Many will encounter all of these types of personnel at some point during their time in the criminal justice system. The decisions made by these authority figures, and the quality of treatment that inmates receive from them, ultimately shape how they view the legitimacy of the system (Tyler et al., 2007). Thus, these relationships influence the inmate's view of procedural justice in the correctional environment, and as cited above, may influence the rate of recidivism upon release.

Empirical evidence supports the notion that the procedural justice-recidivism rate theory applies to corrections, as well as to individual-police interactions. For example, negative

experiences in a corrections environment are viewed as decreasing perceptions of legitimacy of both the law and legal authorities, and in turn results in greater criminal activity (Tyler, 2010). Others have argued that the fairness experienced within a correctional setting shapes not only an inmate's behavior within a prison, but also their perceptions of the law more generally (Sparks, Bottoms, & Hay, 1996).

Franke et al. (2010) found that it is possible to develop correctional environments that can result in neutral, and sometimes even positive, experiences for inmates. They found that by increasing the number of positive experiences, and decreasing the number of negative experiences, as well as limiting environmental deprivation, a correctional institution can increase the inmates' perceptions of legitimacy of the institution. This, combined with previous evidence establishing a connection between legitimacy and decreased recidivism, suggests that the model connecting procedural justice with decreased recidivism may apply within correctional systems, although a direct link has yet to be established.

The context of a correctional institution also differs from other components of the criminal justice system, as the frequency of interaction between authority figures and inmates is far greater than the average person in the community would likely have with a member of law enforcement. Every day, inmates interact with correctional officers (COs) when they line up for count, when they move from their cell block to another unit in the prison, as well as during meal and recreational time. Thus, the effects of procedural justice on inmates' perceptions of the correctional institution may be even more sensitive.

Additionally, it is also important to consider the effects of procedural justice on COs. This is because COs interact not only with inmates, but also report to their captains and supervisors on a regular basis. They are in a unique position of not only making decisions as an

authority figure, but are also subject to decisions handed down by their superiors. There is a developing body of research examining the role of procedural justice and its effects on correctional officers. Findings have suggested that correctional employees experience increased job stress when they feel outcomes are unfair (Lambert, Hogan, & Griffin, 2007). This effect pertained to employees who believed that their assignments involved more work or effort than other jobs at the institution, yet all of the employees received equal pay and benefits. In addition, similar decreased perceptions of both procedural and distributive justice correlated with decreased life satisfaction, and increased burnout and turnover intent (Lambert et al., 2010).

Perceptions of procedural justice within COs appears to relate not only to internal emotional states, but also toward their relationship with the institution at which they work. Specifically, procedural justice appears to have a positive impact on job satisfaction, as well as commitment to the institution (Lambert et al., 2003). Furthermore, procedural justice is related to individual perceptions of fear of the risk of inmate victimization (Taxman & Gordon, 2009). Lower perceptions of procedural justice within the corrections environment were associated with greater fears that inmates would be victimized within that environment.

The research described above converges on the notion that perceptions of procedural justice of both inmates and COs affect subsequent behaviors, both within and outside of the prison environment. With respect to inmates, procedural justice appears to influence their perceptions of the legitimacy of the correctional institution, which may alter their behavior within the prison, as well as the rate of recidivism. For COs, procedural justice is associated with life satisfaction, turnover intent, commitment to the institution, and fears of inmate victimization. But this evidence leaves a crucial question left unanswered: what factors contribute to these perceptions of procedural justice?

Factors Associated with Procedural Justice

There is a developing body of research designed to identify individual factors that correlate with, and may ultimately affect, perceptions of procedural justice within the context of the criminal justice system. These include both behavioral factors and personality factors that can be measured and quantified amongst criminal defendants. Common behavioral factors include drug and alcohol use, aggressive behaviors, and gambling habits. Common personality factors include temperament, constraint, agreeableness, as well as factors identifiable in psychopathic individuals (Hare & Neumann, 2005).

The evidence gathered that supports the existence of a relationship between these individual factors and perceptions of procedural justice is varied, and is typically observed in multiple domains across the criminal justice system. For example, there has been some evidence demonstrating an inverse relationship between testing positive for drug and alcohol use, and perceptions of procedural justice, within the context of police interaction (White, Mulvey, & Dario, 2016). Additionally, previous literature has shown that individuals who view interactions with legal entities (e.g. attorneys, judges) as unfair and harsh, including more aggressive interactions, are less likely to view the law as legitimate (Fagan & Tyler, 2005). Thus, these behavioral factors - drug use, alcohol use, and aggressive behaviors - may be associated with procedural justice in a correctional environment as well.

Similar trends have been observed with personality factors. Personality traits associated with negative emotionality have been previously associated with more frustration with others, as well as greater distrust, which in turn decrease perceptions of fairness in restorative justice conferences (Schuermann & Keith, 2014). With regards to psychopathic traits, there is evidence suggesting that psychopathic individuals generally hold lower perceptions of procedural justice

with respect to police interactions, but these perceptions are more positively influenced by involuntary contacts with legal authorities (Augustyn & Ray, 2016).

There is also a developing body of research examining the relationship between perceptions of procedural justice and the correctional environment itself. For example, a study by Tatar, Kaasa, & Cauffman (2012) found that in a sample of female offenders, the length of their incarceration enhanced the psychological effects of perceived procedural injustice, but did not affect perceptions of procedural justice directly. Additionally, data has shown that greater perceptions of procedural justice by inmates correlated with fewer disciplinary reports issued to them in following two months (Beijersbergen et al., 2014). Despite these findings, however, there is no conclusive determination as to *how* the amount of time spent in a corrections environment, as well as the conditions of that environment, ultimately affect perceptions of procedural justice.

The studies described above suggest that there is a relationship between behavioral, personality, and correctional environment factors, and subsequent perceptions of procedural justice. All of this research, however, has been limited to the scope of police or judicial interactions. No study to date has specifically examined both behavioral and personality factors that may correlate with perceptions of procedural justice within the context of a correctional environment. Additionally, no research has been conducted in which these factors were measured for both inmates and correctional officers at the same correctional institution. The current study was designed to address this gap in the literature. In a series of two studies we: 1) assess which individual factors are associated with perceptions of procedural justice within a specific correctional institution in Connecticut, and 2) determine if there is a difference in

perceptions of procedural justice between inmates placed in different correctional environments within the same institution.

Part 1: An Exploration of Correlates

The goal of the present study is to identify correlations between individual factors of both inmates and correctional officers (COs), and their respective perceptions of procedural justice within the corrections environment. In the present study, a sample of inmates and COs completed a series of questionnaires from which individual factors could be measured, as well as perceptions of procedural justice. We assessed factors that can be generally categorized into three groups: individual behavioral factors (drug use, aggressive behaviors, alcohol abuse), personality factors (negative emotional temperament, constraint, openness, agreeableness, psychopathy), and corrections environment factors (length of incarceration, length of employment at correctional facility, number of disciplinary reports given/received, punishment-control orientation). Our hypotheses are stated below:

Drug Use; Alcohol Abuse. We predict that more general alcohol and drug use will correlate with decreased perceptions of procedural justice.

Aggression. We predict that an increase in aggressive behaviors by both inmates and COs will correlate with decreased perceptions of procedural justice.

Negative Emotional Temperament; Constraint; Openness; Agreeableness. We predict that less negative emotional temperament, more constraint, more openness, and more agreeableness will correlate with higher perceptions of procedural justice for both inmates and COs.

Psychopathy. We predict that higher levels of psychopathy will correlate with lower perceptions of procedural justice.

Length of Incarceration, Length of Employment. We hypothesize that more time spent in a correctional environment (i.e. greater length of incarceration, greater length of employment) will correlate with decreased perceptions of procedural justice.

Disciplinary Reports. We predict that fewer disciplinary reports issued by COs and received by inmates (when controlled for length of incarceration) will correlate with increased perceptions of procedural justice.

Punishment-Control Orientation. For COs, we hypothesize that COs who believe that a correctional institution is primarily a means of punishment for offenders rather than a means of rehabilitation will have lower perceptions of procedural justice.

The correlational analysis used to assess the relationship between these variables and perceptions of procedural justice is merely a first step. Given that there is no research examining all of these factors within a single inmate population, it is important to further our limited understanding of how these factors may contribute to perceptions of procedural justice. With this analysis, we may develop new knowledge as to what extent these variables relate to procedural justice, and how they may be targeted such that we can improve inmates' perceptions of the fairness of the corrections environment.

Method

Participants

Participants for the present study included both eligible inmates ($N = 84$) and correctional officers ($N = 88$) at the Cheshire Correctional Institute in Cheshire, Connecticut. After introducing inmates to the study and receiving consent, inmates were screened for exclusion criteria, which included (a) borderline intelligence (predicted $IQ < 70$) or reading scores below the fourth grade level, (b) a psychosis diagnosis, (c) current use of psychotropic medications

consistent with a diagnosis of psychosis, (d) English as a second language (must be educated from age five and above in English), (e) more than three head injuries with a loss of consciousness for over 30 minutes, or with lasting effects, and (f) a history of chronic, untreated, illness or neurological disorders (e.g. epilepsy or stroke). These exclusion criteria ensured that the individuals in the sample used in the present study's analysis could read, understand, and properly follow the directions they were given. Because of CO union rules, we did not have access to CO personnel files, and thus did not utilize any exclusion criteria for that sample. Both inmates and COs received a series of questionnaires, which assessed the factors used in the present study's correlational analysis.

Measures

Inmates and COs completed a series of questionnaires designed to assess individual behavioral factors, personality factors, and corrections environment factors, as well as the participants' perceptions of procedural justice. Individual behavioral factors for both inmates and COs were measured using the Risky Impulsive Self-Destructive Behavior Questionnaire (RISQ), a 38-item questionnaire that quantifies and qualifies the participants' risky behavior (Sadeh & Baskin-Sommers, 2017).

For inmates, personality factors were measured using the Multidimensional Personality Questionnaire-Brief (MPQ-B), a 276-item questionnaire designed to provide a comprehensive analysis of personality (Patrick, Curtin, & Tellegen, 2002). Additionally, inmates completed a two-hour clinical interview to assess personality factors contained within the Psychopathy Checklist-Revised (Hare et al., 1990). COs were not assessed using the MPQ-B questionnaire, as the length of time needed to complete the questionnaire may have decreased the likelihood that they would complete it during their free time. Thus, CO personality factors were measured using

the ten-item personality inventory (TIPI), a brief questionnaire designed to assess the “Big-Five” personality dimensions (Gosling, Rentfrow, & Swann, 2003). Additionally, COs completed the Self-Report Psychopathy scale, a measure designed to assess primary and secondary psychopathic traits (Levenson, Kiehl, & Fitzpatrick, 1995).

Several corrections environmental factors were recorded for both inmates and COs, including the length of the current incarceration or employment, respectively, at the Cheshire Correctional Institute, as well as the number of Disciplinary Reports received or given throughout the duration of their tenure at the institution. Additionally, COs completed the Punishment-Control Orientation questionnaire, a five-item assessment that measures preference for punitive or restrictive attitudes towards inmates (Bazemore & Dicker, 1994).

To measure perceptions of procedural justice, inmates and COs were given a self-report questionnaire adapted from the Trust in the Legal System project (Tyler, 2012). The measure is adopted to include questions specific to both inmates and COs, and is designed to assess their perceptions of the fairness in the process and regulations of the corrections environment. The inmate version of the questionnaire asks participants about their interactions with COs, as well as the rights the inmates feel entitled to within the institution. The Likert-scale questionnaire included items such as “I am treated with respect by staff in this prison,” “Staff try to do what is best for prisoners,” and “Supervisors consider inmates views when making decisions.” The CO version of the questionnaire asks participants about the level of respect they believe inmates give to them, as well as how the COs are treated by their supervisors. This measure included items such as “I am treated with respect by my supervisors in this prison,” “The decisions my superiors make usually follow the law,” and “This prison is good at placing trust in prisoners.”

Data Analysis

A complete list of the variables used in the correlational analysis with perceptions of procedural justice for both inmates and COs can be found in Appendix 1. Each of the variables listed in the table was then correlated with the procedural justice variable, derived from the total score of the procedural justice questionnaire described above.

Due to the number of statistical analyses conducted in the current study, there is a need for a corrected p -value to control for the possibility of a Type I error (false positive). The strong control of a traditional familywise error rate, however, may not be necessary for such an analysis, as the comparisons used in the current study are designed to identify generalities in the relationships between these variables and perceptions of procedural justice, rather than examining all possible configurations of the hypotheses presented above. Thus, the corrected p -value for each correlational test can be calculated using a Benjamini-Hochberg calculation, which controls for the probability of a false positive, but is less conservative than a traditional Bonferroni correction (Benjamini & Hochberg, 1995). The Benjamini-Hochberg significance levels reported below are designated by q^* . All analyses were conducted using SPSS v.25 software (SPSS Inc., Chicago, Illinois, USA).

Results

Inmate Correlations

A complete list of the correlations found with respect to inmates and COs can be found in Table 1.

Table 1: Correlations between individual factors and perceptions of procedural justice for both inmates and COs.

Inmates				COs			
Variable	r	p	q*	Variable	r	p	q*
Drug Use	.017	.877	.050	Drug Use	-.037	.734	.050
Aggression	-.049	.660	.031	Aggression	.038	.728	.044
Alcohol Abuse	.080	.469	.019	Alcohol Abuse*	-.228	.037	.028
Negative Emotional Temperament	.058	.598	.025	Openness*	.216	.046	.033
Constraint	.030	.786	.048	Agreeableness**	.387	< .001	.006
PCL-R Total Score	.189	.087	.013	Self-Report Psychopathy**	-.584	< .001	.011
Years since current sentence began*	-.221	.046	.006	Years of Employment	-.089	.410	.039
Number of DRs	-.022	.841	.044	Number of DRs issued**	-.381	< .001	.017
				Punishment-Control Orientation**	-.431	< .001	.022

For Inmates and COs:

* = significant at .05 level

** = significant at Benjamini-Hochberg corrected level

Notably, there were very few significant correlations for either the behavioral or personality factors of inmates, which contradicts the original hypothesis. The only significant correlation between the factors measured and perceptions of procedural justice was the number

of years since the inmates' current incarceration began, although this correlation was not significant at the Benjamini-Hochberg corrected level.

CO Correlations

There were significant correlations at the Benjamini-Hochberg corrected level in the personality and corrections environment factor categories. Specifically, there was a significant positive correlation between the agreeableness of COs, and their perceptions of procedural justice, $r(86) = .387, p < .001, q^* = .006$. That is, the more agreeable COs reported themselves to be, the higher their perceptions of fairness within the corrections environment. Additionally, there was a significant negative correlation between self-report psychopathy (SRP) total score and perceptions of procedural justice, $r(84) = -.584, p < .001, q^* = .011$. The SRP total score incorporated sub-scores for both Factor 1 (interpersonal-affective) and Factor 2 (impulsive-antisocial) traits of psychopathy. There was also a significant negative correlation between the number of disciplinary reports issued by the COs, controlled for the number of years they had been employed at Cheshire, and their perceptions of procedural justice, $r(84) = -.381, p < .001, q^* = .017$. We also found a significant negative correlation between CO Punishment-Control Orientation scores, and perceptions of procedural justice, $r(84) = -.431, p < .001, q^* = .022$. That is, the greater the belief that inmates are meant to be punished in a corrections environment, the lower the perceptions of procedural justice.

Interim Discussion

The correlational analysis reported above suggest that there may be a relationship between several individual factors of COs and their perceptions of procedural justice. More specifically, there was a trend in the inmate sample, and significant correlations in the CO sample, in the third grouping of factors: the correctional environment. But, as with any

correlational analysis, there is a limitation to these findings: no causal relationship can be established. Additionally, it is difficult to conduct further research on this matter using an experimental design with inmate participants in different correctional environments, given the natural constraints of state correctional policy.

Part 2: A Naturally Occurring Experiment

In March of 2017, the Cheshire Correctional Institute opened a new unit. The Truthfulness, Respectfulness, Understanding, and Elevating (T.R.U.E.) unit was created with the understanding that the brain is still developing after an individual reaches the age of legal adulthood. It houses 18 to 25-year-old incarcerated men, along with “lifers,” or individuals serving extended sentences that serve as mentors to the younger inmates.

The structure of the corrections environment in this unit is based on a German penal model, which provides more favorable living conditions and opportunities for inmates (Lösel & Bliesener, 1989). Special classes are provided for the inmates in topics such as conflict resolution and embracing fatherhood, as well as life skills such as understanding the stock market, preparing for job interviews, and cooking (Porter, 2018). The COs in the unit receive specific training in de-escalation tactics, interpersonal-affective communication skills, as well as a briefing on the basic tenets of the purpose and intent of the program in the T.R.U.E. unit.

The structure of the T.R.U.E. unit differs from the general inmate population units at the prison. Thus, within a single correctional institution, there are two samples in which other “correctional environment” factors described in the first part of the current study differ. We can then see if these differences relate to altered perceptions of procedural justice, in an effort to further understand the relationship between the corrections environment and the perceived fairness of the system.

Method

Participants

The research conducted by the Mechanisms of Disinhibition lab at the Cheshire Correctional Institute, including the sample described in Part 1 of the present study, included both inmates and COs in the general population units, as well as within the T.R.U.E. unit. Thus, for the current analysis, four samples were created: inmates in the general population ($n = 42$), inmates in the T.R.U.E. unit ($n = 42$), COs assigned to the general population ($n = 57$), and COs assigned to the T.R.U.E. unit ($n = 31$). Because the inmates in the T.R.U.E. unit were between the ages of 18 and 25, every participant from that unit in the present study was age-matched with participants in the general population units.

Measures

As described above, both inmates and COs completed a questionnaire pertaining to their perceptions of procedural justice, as part of a battery of questionnaires given to them over the course of the study. The version of the questionnaire given to participants corresponded to their role within the correctional institution; the inmate questionnaire pertained to procedural justice with respect to COs and the procedural fairness of the prison, while the CO questionnaire asked about their ability to make fair decisions when interacting with inmates, as well as the procedural fairness of the officer hierarchy.

Data Analysis

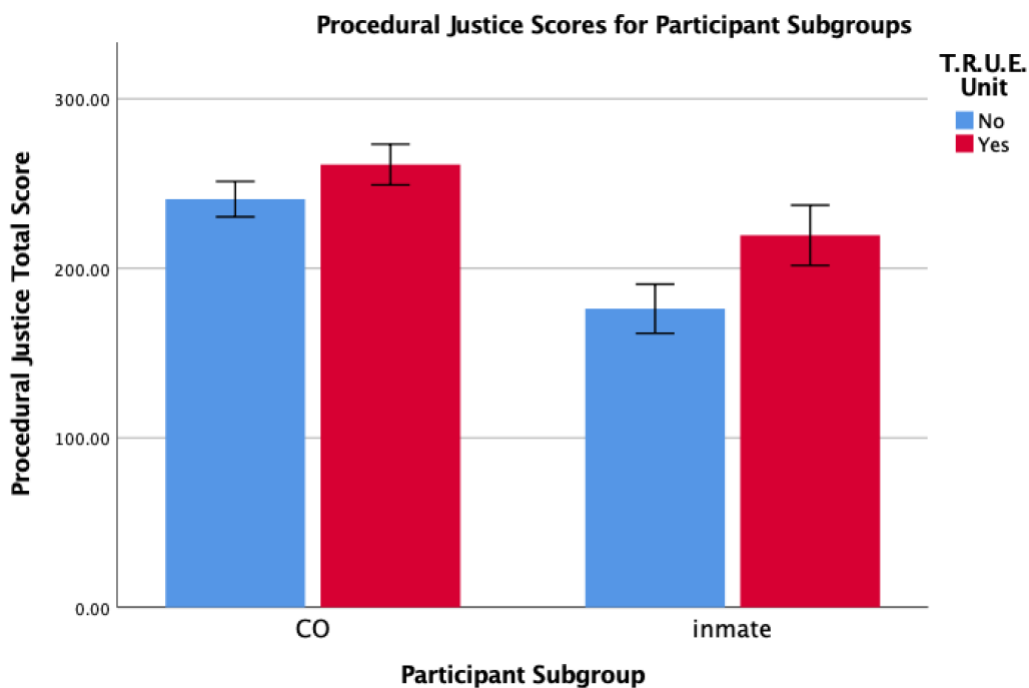
To compare the differences in the perceptions of procedural justice between inmates and COs in the T.R.U.E. unit and their counterparts in the general population, we used a one-way analysis of variance (ANOVA). Because we previously found a significant (at $p = .05$)

correlation between perceptions of procedural justice and length of incarceration within the inmate sample, the analysis of variance controlled for that variable.

Results

The analysis of variance yielded a significant difference in perceptions of procedural justice between inmates in the T.R.U.E. Unit, and age-matched inmates in the general population units, when controlling for the length of incarceration, $F(1, 80) = 12.861, p = .001$. Additionally, we found a significant difference in perceptions of procedural justice between COs assigned to the T.R.U.E. Unit, and those assigned to the general population units, $F(1, 86) = 6.029, p = .016$. A graph displaying the mean total procedural justice score for each of the four subgroups can be found in Figure 1.

Figure 1: Graph displaying the mean total procedural justice scores for each of the four subgroups used in the ANOVA. On the vertical axis, “Procedural Justice Total Score” is calculated as the sum of the Likert-scale responses to the procedural justice questionnaire.



Interim Discussion

In an effort to further understand how the role of a corrections environment may affect perceptions of procedural justice, we were able to take advantage of a “naturally-occurring” experimental setting within the Cheshire Correctional Institute. This allowed us to control for geographical differences, as well as any differences in policy or procedure that may exist across institutional settings. Through this “experimental” design, we were able to find a significant difference in perceptions of procedural justice for both inmates and COs in the T.R.U.E. unit, compared to their counterparts in the general population units. This difference may be related to the differences in the correctional environment, but other influencing factors cannot be ruled out at this time. For example, since the T.R.U.E. unit inmates were chosen based on submitted applications, these differences may be attributed to the differences in the types of individuals who would align themselves with the tenets of the T.R.U.E. unit, or it may be attributed to personality factors that made them more favorable candidates for the unit. To control for these possibilities, an additional sample may be drawn from a third population within the correctional institution: inmates who applied to be housed in the unit, but were denied because of occupancy restrictions. A difference in perceptions of procedural justice between this third sample and the inmates housed in the T.R.U.E. unit would provide additional evidence to support the claim that a correctional environment is causally related to perceptions of procedural justice.

General Discussion

The results of the current study reveal important information about the role of a correctional environment in shaping perceptions of procedural justice for both inmates and COs. Specifically, we observed correlations in both behavioral and personality factors of COs, and their perceptions of procedural justice. Furthermore, there are trends suggesting that the degree

of exposure to the corrections environment for both inmates and COs correlates with these perceptions. This was also evidenced by significant differences in perceptions of procedural justice for both inmates and COs between the T.R.U.E. unit correctional environment, and the general population units. Together, these results suggest that the correctional environment may shape both CO and inmate perceptions of procedural justice, and thus affect rates of recidivism upon release.

The null results between individual factors and perceptions of procedural justice for inmates was surprising, given that previous research demonstrated a relationship between these variables in other contexts within the criminal justice system. Specifically, the failure to detect an effect to support the idea that certain personality traits, such as constraint, negative temperament, and psychopathic factors runs counter to intuitive notion that emotional predisposition influences perceptions of interpersonal interactions. One finding we found especially notable was the absence of a relationship between inmate Psychopathy Checklist total scores (PCL-R), and perceptions of procedural justice. Previous literature has identified a relationship between more psychopathic traits and lower procedural justice scores, but we did not find evidence consistent with that finding. To understand this discrepancy, we can refer to one anecdotal piece of evidence. One participant, an inmate with a PCL-R score above 30, demonstrated extreme glibness, superficial charm, and grandiosity, both in his self-reported behaviors and in his conduct during the clinical interview. Before and after each session, he had numerous interactions with the COs in the vicinity of the interview room, nearly all of which were very friendly, colloquial conversations. Further research is needed to determine if the interpersonal factors of psychopathy are more likely to positively or negatively influence inmate perceptions of their interactions with COs.

There were significant correlations in the individual factors measured for COs and their perceptions of procedural justice. Specifically, agreeableness and self-report psychopathy scores were inversely correlated with perceptions of procedural justice. These findings align with both intuition and previous literature regarding these personality traits and interpersonal relationships within the criminal justice system (Fagan & Tyler, 2005). For example, a correctional officer who is less agreeable may be less likely to accept the outcomes of decisions handed down by their supervisors, or less likely to understand the viewpoints of inmates. Additionally, COs high on traits of grandiosity or lacking empathy may be more likely to view the correctional system as unfair against them, or overly favorable towards inmates. To further understand the relationship between these personality traits and their potential effects on perceptions of procedural justice, a study designed to specifically identify a causal link between them would be useful in order to understand if they are directly related, or if there is an intermediary factor involved.

A correlation between the duration of time spent at the correctional institute and decreased perceptions of procedural justice was observed for both inmates and COs. This may be due to a variety of factors, including the increased opportunity to be exposed to adverse events that would decrease perceptions of procedural justice. Because of the limitations of a correlational analysis, additional studies are needed to understand the nuances of why more time spent within a correctional environment is related to decreased perceptions of procedural justice.

The present study revealed that a correctional environment may influence perceptions of procedural justice for both inmates and COs. This is supported by correlations between quantifiable factors of exposure in a correctional environment and perceptions of procedural justice, as well as a difference in total procedural justice scores for both inmates and COs across two different correctional environments within the same institution. As noted above, the COs

assigned to the T.R.U.E. unit received training regarding interpersonal development with inmates, as well as training on the tenets of the unit's purpose. This suggests that shaping an officer's views of inmates may benefit the inmates in terms of how fairly they perceive the system. With proper procedural justice training, including informing COs of the value of increasing an inmate's perceptions of procedural justice, this effect may be enhanced.

This training, however, would be only one step in what can be a larger transition in correctional policy. In Europe, for example, substantive changes have occurred, both in the design of the prison and the freedoms provided to inmates, and these changes have resulted in positive outcomes for inmates upon their release. Empirical evidence has shown that in prisons in Scandinavia, Germany, and the Netherlands that utilize a rehabilitative penal model, such as the one in the T.R.U.E. Unit, recidivism rates are lower (Lappi-Seppälä, 2007; Subramanian & Shames, 2013). While the United States correctional system may not be near a point where large-scale changes in prison layout and structure can occur, the very preliminary findings reported in the present study suggest that doing so may yield similar results in post-sentence outcomes.

If we are to measure the efficacy of our correctional system, then we must assess it by examining the outcomes of inmates who are released back into society. Specifically, we should consider how well prisons perform at decreasing the likelihood that inmates will commit another crime after their release. As previous evidence has shown, this can be done by enhancing an inmate's view of the system as more legitimate, which may be done by increasing perceptions of procedural justice. Thus, policy should be directed towards making the correctional system more fair for those contained within it, in an effort to release them as functional members of society.

Author Contributions

Andrew Del Vecchio wrote the manuscript for the current study, with comments and suggestions provided by Dr. Arielle Baskin-Sommers, as well as three anonymous peer reviewers. The data used in the present study was collected through the Mechanisms of Disinhibition Lab at Yale University (PI: Dr. Baskin-Sommers). Dr. Baskin-Sommers assisted in analyzing the data, describing the methods and exclusion criteria, and creating Figure 1.

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Appendix 1: Variables Correlated with Perceptions of Procedural Justice for inmates and COs

Inmates			COs		
Variable	Group	Source	Variable	Group	Source
Drug Use	Behaviors	RISQ	Drug Use	Behaviors	RISQ
Aggression	Behaviors	RISQ	Aggression	Behaviors	RISQ
Alcohol Abuse	Behaviors	RISQ	Alcohol Abuse	Behaviors	RISQ
Negative Emotional Temperament	Personality	MPQ-B	Openness	Personality	TIPI
Constraint	Personality	MPQ-B	Agreeableness	Personality	TIPI
PCL-R Total Score	Personality	PCL-R	Self-Report Psychopathy	Personality	SRP
Years since current sentence began	Corrections Environment	Inmate File	Years of Employment	Corrections Environment	Self-Report
Number of DRs	Corrections Environment	Inmate File	Number of DRs issued	Corrections Environment	Self-Report
			Punishment-Control Orientation	Corrections Environment	PCO