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Community Violence and Prosociality: Experiencing and Committing Violence Predicts Norm-Enforcing Punishment but Not Cooperation

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Abstract

How does violence affect prosociality? Previous work shows that exposure to intergroup violence is positively related prosociality. Here, we test whether this finding extends to other types of community violence. In a sample of 100 residents from New Haven, CT, we examine the relationship between exposure to—and committing of—violence and economic games measuring prosociality (paying a cost to benefit others) as well as norm-enforcing punishment (paying a cost to impose a cost on selfish actors). We find that both exposure to violence and committing a violent crime are not associated with cooperation but are positively associated with norm-enforcing punishment. These results suggest that unlike during intergroup conflict, violence is unrelated to cooperation when it occurs in a community context. Rather, norm-enforcing punishment is more commonly employed by individuals who have been exposed to community violence and engaged in violent behaviors themselves.

Keywords

violence, cooperation, punishment, prosocial

A great deal of theoretical and empirical evidence shows that, perhaps surprisingly, violent intergroup conflict fosters prosocial behavior at the societal and individual level (Bauer et al., 2016; Choi & Bowles, 2007). From an evolutionary perspective, theoretical work suggests that altruism and parochialism (hostility toward out-group members) may have evolved together in response to intergroup conflict (Bowles, 2006; Choi & Bowles, 2007). By this account, the combination of altruism toward fellow group members and hostility toward out-group members would motivate individuals to risk harm to themselves in order to perpetrate violence against members of other groups during intergroup conflict. As a result, groups with high levels of both altruism and parochialism would prevail over groups of nonparochial altruists—and thus intergroup conflict would lead to the coevolution of in-group love and out-group hate via group selection.

Findings from empirical studies across the globe are consistent with this evolutionary theory. Exposure to war violence at the individual level is associated with more prosocial behavior, both in economic games (Bauer, Cassar, Chytilová, & Henrich, 2014; Gilligan, Pasquale, & Samii, 2014) and when measuring self-reported behaviors such as participating in the community and holding leadership positions (Bellows & Miguel, 2006; Blattman, 2009). A meta-analysis shows that these effects are consistent across age, gender, and type of violence experienced during war, and they hold steady over time (Bauer et al., 2016). Furthermore, in experimental games, war violence is preferentially positively associated with prosocial behavior toward the in-group relative to the out-group.

Yet violence is not restricted to instances of active conflict between groups. For example, exposure to community violence (e.g., gunshots, other weapon use, physical aggression) can be an imbedded component of the social landscape in some communities. In the context of disadvantaged communities outside of regions plagued by active conflict, such as many urban areas in the United States, rates of exposure to community violence are disproportionately high (Anderson, 1994; Stein, Jaycox, Kataoka, Rhodes, & Vestal, 2003). Here, we ask whether the previously demonstrated positive relationship between exposure to intergroup violence and prosociality extends to community violence. Can a threat to one's own survival increase

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prosocial behavior or does prosocial behavior only increase when there is a threat to the survival of one's group?

Furthermore, prior work on social decision-making in psychology and behavioral economics illustrates the importance of not just prosociality but also norm-enforcing punishment: The willingness to pay costs in order to impose costs on those who act selfishly. Norm-enforcing punishment plays an important role in promoting social welfare by deterring bad behavior and is psychologically distinct from cooperation (Böckler, Tusche, & Singer, 2016; Peysakhovich, Nowak, & Rand, 2014). Yet research on exposure to violence (ETV) almost exclusively examines prosociality and not punishment (cf. Gneezy & Fessler, 2011). Thus, we explore the link between ETV and both prosociality- and norm-enforcing punishment. Finally, we also examine the relationship between *committing* violence and prosocial behavior, using objective (Department of Correction) data on violent crime to validate self-report incidence.

Method

Sample

The sample consists of 100 residents (76% male) of New Haven, CT. New Haven has a violent crime rate of 9.12 per 1,000 residents (compared to a statewide rate of 2.18 and a national median of 3.8) and ranks in the bottom 5% of American cities in terms of safety ("Neighborhood Scout," 2018). In a recent survey conducted in low-income neighborhoods in New Haven, 73% of respondents reported having heard gunshots, and many had a family member or close friend hurt (29%) or killed (18%) by violent acts (Santilli et al., 2017).

Participants were recruited through flyers posted throughout the city limits of New Haven (e.g., bus stops, stores, libraries, courts, poles) calling for individuals to participate in a research study on risk-taking behaviors including alcohol and drug use, impulsive behavior, criminal behavior, gambling, and bullying. The flyer provided a phone number and e-mail address for people interested in participating in the research. Participants who met the following exclusion criteria were screened out of the study before completing the relevant study measures: performed below the fourth-grade level on a standardized measure of reading, had an IQ of <70, or met criteria for psychotic disorders.

To determine the sample size, we conducted an a priori power analysis based on published studies using one-shot economic games and their relationship with an individual difference variable (Curry, Chesters, & Viding, 2011; Peysakhovich et al., 2014). The power analysis indicated that a sample size of approximately 94–110 participants would be sufficient to detect small to moderate effects with 80% power.

Measuring Violence

To measure ETV, we used the 13-item ETV Scale (Selner-O'Hagan, Kindlon, Buka, Raudenbush, & Earls, 1998), which is a self-report questionnaire of violence experienced in one's lifetime. It measures both direct victimization (6 items) and witnessing violence (7 items). Examples of items include "Have you been hit, slapped, punched, or beaten up?" and "Have you seen someone else get attacked with a weapon, like a knife or bat?" Total scores range from 0 to 13, with higher scores indicating greater lifetime exposure to violent situations.

To measure committing violence, all participants were asked about their engagement in criminal acts (e.g., ever arrested, incarcerated, or done things that were against the law, even if you weren't caught for them). If affirmative, participants provided the types of criminal acts. This self-report was confirmed using the State of Connecticut Department of Correction inmate database. If participants self-reported a crime that was not listed in the inmate database, we used their self-report since people can commit a crime and not be arrested for it. If participants failed to self-report a crime that was listed in the database, we used the database information. To differentiate between violent and nonviolent crimes, we used the legal definitions from the state of Connecticut. Nonviolent crimes are defined as property, drug, and public order offenses which do not involve a threat of harm or an actual attack upon a victim. The most frequently identified nonviolent crimes involve drug trafficking, drug possession, burglary, and larceny. A violent crime is a crime in which an offender uses or threatens force upon a victim. This entails both crimes in which the violent act is the objective, such as murder, and crimes in which violence is the means to an end. Violent crimes may, or may not, be committed with weapons. Common examples are murder, assault, rape, and robbery.

Measuring Cooperation

We assess cooperation using a series of one-shot (single interaction) games, in which participants decide whether to pay a personal cost to give a benefit to someone else. These include the Dictator Game, Trust Game, and Public Goods Game. Participants played the games by themselves during the lab session and indicated how they would respond in each role for every game. They were told that one role would be randomly selected for a payout and that to determine the amount they would be matched with another study participant (see below for more details on the study procedure; the games were based off of those used in Peysakhovich, Nowak, & Rand, 2014).

Dictator game. One player serves as the dictator and starts with an endowment of US$10[1], while the other player serves as the recipient and starts with $0. The dictator then chooses how much (if any) of the $10 they would like to transfer to the recipient. The recipient makes no decisions in this interaction and cannot retaliate in any way for the decision of the dictator. The participant's behavior when they are in the role of dictator serves as a measure of prosocial cooperation.

Trust game. Two players are given an endowment of $5. Player 1 decides whether to transfer their $5 to Player 2 (we follow the

procedure of Peysakhovich et al., 2014, in using a binary choice for Player 1). If they choose to transfer the money, this amount is tripled (i.e., it becomes $15) and added to Player 2's endowment, which would then total $20. Player 2 then decides how much to return to Player 1, choosing any amount of the transferred $15 to return. Both roles in this game measure cooperation, specifically the role of trust and trustworthiness. Decisions in both roles are used as a part of the cooperation measure in the analysis.

Public goods game. Four players are given an endowment of $5. Each player then decides how much of their endowment to contribute to a "common project." The total contributions are multiplied by 2 and divided equally among all players (irrespective of initial contribution). In this game, it is only beneficial to give to the group under the assumption that other members of the group will contribute a generous portion of their endowment, given that players who choose to keep all of their own endowment earn the largest amount of money for themselves. This game assesses within-group cooperation.

Measuring Norm-Enforcing Punishment

We assess norm-enforcing punishment using a series of one-shot (single interaction) games, in which participants decide whether to pay a cost to impose a cost on someone who behaves selfishly. These include the Second-Party Punishment Game, Third-Party Punishment Game, and Ultimatum Game.

Second-party punishment. Each player is given an endowment of $5. In the first stage, each player makes a simultaneous choice to either give up their endowment of $5 in order to ensure the other player receives $10 or give nothing and keep the $5. Once that decision has been made, each player receives an additional endowment of $4 that can be spent to make the other player lose money. Decisions on how much money the other player should lose are contingent upon the other player's choice in the first stage. For every $1 that a player spends, the other player loses $4. The money spent and lost in this part of the interaction is not transferred to either of the players; it is simply removed from the total amount that each player has. This game assesses norm-enforcing punishment in Stage 2 when the participant decides whether to punish defectors. It also assesses antisocial punishment when the participant decides whether to punish cooperators.

Third-party punishment. This is a three-person game in which Players 1 and 2 are each endowed with $10, and Player 3 is an impartial observer. Player 1 first chooses whether to take all of Player 2's money in a binary choice. If Player 1 chooses to take the money, Player 3 can then choose how much (if any) of their own $10 endowment to pay to make Player 1 lose money. For every dollar that Player 3 pays, Player 1 loses five dollars, meaning that a small cost to Player 3 can incur a relatively large cost to Player 1. The measure of norm-enforcing punishment in this game is the participant's decision as Player 3 about how much to punish Player 1 for taking Player 2's money.

Ultimatum game. One player (the Proposer) is given an endowment of $10 to split with the second player (the Responder). The Proposer then decides how to split the endowment with the Responder, who can either accept or reject this offer. If they reject the offer, both players get nothing. Rather than responding to a specific offer, participants indicate their minimal acceptable offer (MAO), such that an offer below the MAO will be rejected. The MAO serves as a measure of norm-enforcing punishment because when the Responder rejects an offer, they are sacrificing money in order to punish the Proposer for making too low an offer.

Procedure

Participants came into the lab on two occasions for the study, separated by 2–7 days. During the first session, they filled out the survey measures, including the ETV Scale and questions about their involvement in criminal behavior. During the second visit, they played a battery of economic games adapted from Peysakhovich, Nowak, and Rand (2014) that involved making decisions about cooperation and punishment. Decisions in the games were made using the strategy method, in which participants indicate how they would respond in each possible role in each game, and then one decision is selected at random to be enacted for payment. Participants were told that to determine their payout for the selected game, their choices would be matched with those of another participant in the study who is "someone from your community like you." That other person was not in the lab at the same time as the participant. For each game, participants read the instructions and then answered a few comprehension questions. Comprehension was high, with 83% of participants answering all comprehension questions correctly. Participants were paid $10 per hour, plus a bonus based on their decisions in one randomly selected economic game (up to $20). All participants provided written informed consent according to the procedures set forth by the Yale University Human Subjects Committee.

Data Analysis

We use ordinary least squares regression, with either cooperation or norm-enforcing punishment as the dependent variable, and either ETV or committing a violent crime as the independent variable. As robustness checks, we also run models in which we exclude participants who failed at least one comprehension check, and in which we control for the following set of demographic variables: age, gender ($1 = female$, $0 = male$), race ($1 = White$, $0 = Black, Asian, or Hispanic$), income (categorical variable with five income levels), employment status (categorical variable with five levels: disability, full time, full-time student, part time, unemployed), and the Barratt Simplified Measure of Social Status Education and Occupation subscales (Barratt, 2006). Regression tables for all analyses can

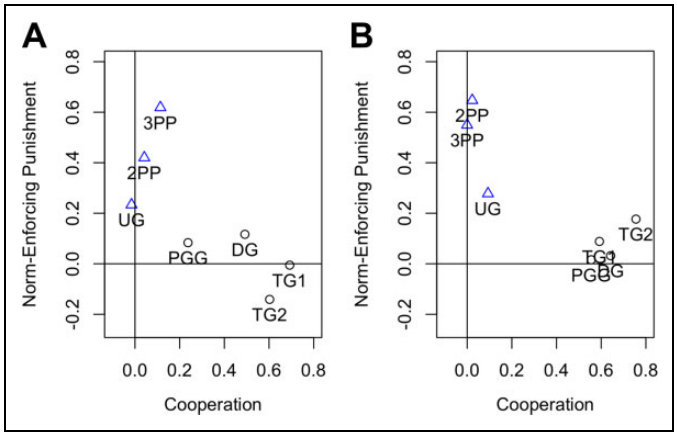

Figure 1. Cooperation and norm-enforcing punishment are psychologically distinct constructs. Both panels show factor loadings for each economic game decision from a factor analysis using an iterated principle factors model. (a) In this sample from New Haven, factor analysis reveals that cooperation and norm-enforcing punishment decisions in the economic games load onto two distinct factors. (b) Peysakhovich, Nowak, and Rand. (2014) had a sample on Amazon Mechanical Turk complete the same economics games (although decisions of how much money to give were on a continuous scale, whereas they are categorical in the present research). Factor analysis reveals a similar pattern.

be found in the Supplementary Materials. Materials, data, and analysis code that support the findings of this study are available on Open Science Framework at the following web address (https://osf.io/cbax5/?view_only=8fcf960fa5b34519908c7f64ced1e48e).

Results

Factor Analysis of Cooperation and Norm-Enforcing Punishment

First, we use factor analysis to reduce all of the economic games to two dimensions. Based on the results of Peysakhovich et al. (2014) and Reigstad, Strømland, and Tinghög (2017), we expected the cooperation decisions to load heavily on one dimension and the norm-enforcing punishment decisions to load heavily on a second dimension. Consistent with this expectation, and following the analysis approach of Peysakhovich et al. (2014) using an iterated principle factors model, we find that the cooperation decisions in the Dictator Game, Trust Game (both roles), and Public Goods Game load on one factor, while the norm-enforcing punishment decisions in the Second- and Third-Party Punishment Games and the Ultimatum Game load on a second factor (see Figure 1a). These two factors explain 75.6% of the variance in the game decisions (48.3% for the cooperation factor and 27.3% for the punishment factor). The results are strikingly similar to the pattern observed by Peysakhovich et al. (2014) among 576 online participants recruited from Amazon Mechanical Turk (MTurk; see Figure 1b). We compute scores for these cooperation and norm-enforcing punishment factors, which are used as the dependent variables in the analyses.

Table 1. Descriptive Statistics for Games, Primary Variables, and Covariates.

Variable	*M*	*SD*
Games		
Dictator Game (0–10)	3.66	2.85
Trust Game: Player 1	78%	—
Trust Game: Player 2 (0–15)	8.40	3.83
Public Goods Game (0–5)	2.73	2.07
Third-Party Punishment (0–4)	1.94	1.58
Second-Party Punishment (0–4)	1.48	1.55
Ultimatum Game (0–10)	4.02	2.49
Antisocial Punishment (0–4)	1.27	1.55
Violence variables		
Exposure to violence	5.32	4.10
Committed a violent crime	41%	—
Committed a nonviolent crime	63%	—
Covariates		
Age	38.22	10.47
Female	24%	—
Race		
White	44%	—
Black	52%	—
Hispanic	3%	—
Asian	1%	—
Income level		
$0–15,000	61%	—
$15,001–30,000	26%	—
$30,001–45,000	5%	—
$45,001–60,000	5%	—
$60,000+	3%	—
Employment status		
Full-time employment	15%	—
Part-time employment	19%	—
Full-time student	6%	—
Disability	5%	—
Unemployed	55%	—
Barratt Education subscale	13.74	3.61
Barratt Occupation subscale	21.08	8.95

Descriptive Statistics

Rates of cooperation and norm-enforcing punishment are substantial in this sample (see Table 1 for descriptive statistics and Table 2 for zero-order correlations for the violence, cooperation, and punishment variables). For example, in the Dictator Game, 75% of participants chose to give the other player at least some amount of their endowment, with 35% giving away half and 7% giving away all of it. In the Third-Party Punishment Game, 69% of participants chose to give up at least some of their money in order to punish another player for failing to cooperate with a third player. These rates of cooperation and norm-enforcing punishment are relatively consistent with what is observed in prior work. For example, Peysakhovich et al.'s (2014) MTurk sample found that 76.52% of participants chose to give the other player at least some of their endowment in a

Table 2. Correlations Among Primary Variables.

Variable	Correlations				
	1	2	3	4	5
1. Exposure to violence	—				
2. Committed a violent crime	.47***	—			
3. Committed a nonviolent crime	.43***	.44***	—		
4. Cooperation	.05	−.06	.04	—	
5. Norm-enforcing punishment	.28**	.34***	.08	.03	—
6. Antisocial punishment	.08	.08	.02	−.17	.47***

*$p < .05$. **$p < .01$. ***$p < .001$.

Dictator Game, and 81.77% chose to give up at least some of their money to punish in a Third-Party Punishment Game.

Level of ETV is also high in this sample, with 83% of participants reporting at least one ETV in their lifetime. The mean number of types of violent incidents is five of a possible 13 ($SD = 4.10$), with a quarter of the sample experiencing eight or more types of violence. Separating out victimization from witnessing violence, 73% report being a victim of at least one type of violence (mean = 2.04, $SD = 1.79$), and 80% report witnessing at least one type of violence (mean = 3.28, $SD = 2.54$). Participation in violence is also common in this sample, with 41% of participants committing a violent crime; 63% of participants committed a nonviolent crime. The only observable difference in demographic characteristics between those exposed to more versus less violence is gender, with women exposed to less violence, $b = -3.78$, $t(86) = -3.93$, $p = .000$, $pr = -.39$, 95% confidence interval (CI) = [−.55, −.20]. There are no observable differences between those who have versus have not committed a violent crime (see Table S1 in the Supplementary Materials).

Violence and Cooperation

Contrary to the findings of prior research conducted in areas with intergroup conflict (e.g., warzones and postconflict environments), we do not find a significant positive association between ETV and cooperation in this sample from a high-violence urban area, $b = 0.01$, $t(98) = 0.51$, $p = .613$, $r = .05$, 95% CI [−.15, .25] (see Figure 2). We also do not find a positive association between committing a violent crime and cooperation, $b = -0.10$, $t(98) = -0.63$, $p = .527$, $r = -.06$,

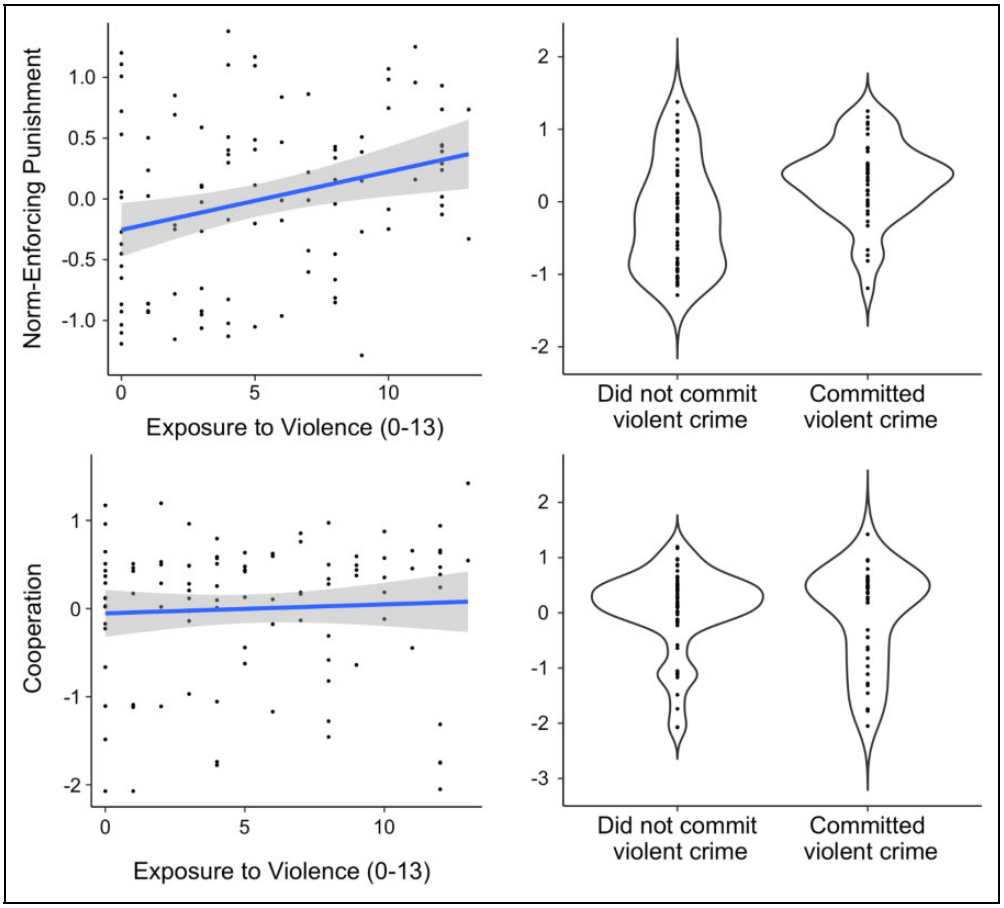

Figure 2. Violence is positively associated with norm-enforcing punishment, but not cooperation. In the first column, the line shows predicted values from an ordinary least squares regression using exposure to violence to predict norm-enforcing punishment and cooperation. The shaded area is the 95% confidence interval around the predicted values. The second column shows the kernel probability density of the norm-enforcing punishment and cooperation variables for participants who did and did not commit a violent crime.

95% CI [−.26, .13]. These results remain consistent when excluding participants who failed at least one comprehension check, $b = 0.02$, $t(81) = 0.72$, $p = .472$, $r = .08$, 95% CI [−.14, .29] for ETV; $b = -0.10$, $t(81) = -0.58$, $p = .565$, $r = -.06$, 95% CI [−.28, .15] for committing violence, and when controlling for the full set of demographic variables described above, $b = 0.01$, $t(85) = 0.60$, $p = .553$, $pr = .06$, 95% CI [−.15, .27] for ETV; $b = -0.12$, $t(85) = -0.67$, $p = .507$, $pr = -.07$, 95% CI [−.28, .14] for committing violence.

Violence and Norm-Enforcing Punishment

When considering norm-enforcing punishment, however, we observe a different pattern. First, as shown in Figure 2, ETV is positively associated with norm-enforcing punishment, $b = 0.05$, $t(98) = 2.90$, $p = .005$, $r = .28$, 95% CI [.09, .45]. This is the case both for witnessing violence, $b = 0.08$, $t(98) = 2.84$, $p = .005$, $r = .28$, 95% CI [.08, .45], and for being a victim of violence, $b = 0.10$, $t(98) = 2.57$, $p = .012$, $r = .25$, 95% CI [.06, .43]. Second, committing a violent crime is also positively associated with engaging in norm-enforcing punishment, $b = 0.49$, $t(98) = 3.61$, $p = .000$, $r = .34$, 95% CI [.16, .51]. These results are robust to excluding participants who failed at least one comprehension check, $b = 0.05$, $t(81) = 3.03$, $p = .003$, $r = .32$, 95% CI [.11, .50] for ETV; $b = 0.45$, $t(81) = 3.03$, $p = .003$, $r = .32$, 95% CI [.11, .50] for committing violence, and to including the full set of demographic covariates described above, $b = 0.05$, $t(85) = 2.51$, $p = .014$, $pr = .26$, 95% CI [.06, .45] for ETV; $b = 0.45$, $t(85) = 3.08$, $p = .003$, $pr = .32$, 95% CI [.11, .49] for committing violence.

Norm-enforcing punishment is prosocial, in that punishing those who behave selfishly incentivizes good behavior and promotes prosociality. However, it may be that the results we observe for norm-enforcing punishment reflect a general association between violence and the willingness to punish rather than indicate a specific association between violence and prosocial punishment. We examine this possibility by looking at the association between violence and punishment of cooperative (rather than selfish) coplayers in the Second-Party Punishment Game. We find that violence is not associated with punishment of cooperators, $b = 0.03$, $t(98) = 0.82$, $p = .413$, $r = .08$, 95% CI [−.12, .27] for ETV; $b = 0.25$, $t(98) = 0.80$, $p = .424$, $r = .08$, 95% CI [−.12, .27] for committing violence, suggesting that violence is not simply positively correlated with willingness to engage in any kind of punishment in our sample. Instead, the effect is specific to norm-enforcing punishment of selfish others.

Finally, we identified a relationship between norm-enforcing punishment and committing violent crime—but is this specific to violent crime or does it reflect a relationship with committing crime more generally? We address this question by looking at the association between committing a nonviolent crime and norm-enforcing punishment. Unlike violent crime, committing a nonviolent crime is not significantly associated with norm-enforcing punishment, $b = 0.12$, $t(97) = 0.81$, $p = .420$, $r = .08$, 95% CI [−.12, .27]. This provides evidence of a specific link between violence and norm-enforcing punishment.

Discussion

The present study is the first to examine the relationships among exposure to—and committing of—violence and cooperation and norm-enforcing punishment in a disadvantaged urban area in the United States. Contrary to previous research conducted in war zones and postconflict environments (Bauer et al., 2016), we do not find a positive association between violence and cooperation in a series of economic games.

These findings suggest that violence may only be positively associated with cooperation when it occurs in the context of intergroup conflict. This is consistent with the motivating theory, in which conflict between groups explains why violence increases cooperation (Choi & Bowles, 2007). From an evolutionary perspective, cooperative groups are more likely to prevail over uncooperative groups, and therefore intergroup conflict increases selection for cooperative people. However, this theory does not predict whether violence in other contexts should positively relate to prosociality. Accordingly, our findings suggest that exposure to community violence and engagement in violence in disadvantaged neighborhoods, which poses an individual rather than an intergroup survival threat, may not be positively associated with cooperation. In these communities, a lack of social cohesion is one of their defining characteristics, with neighbors viewing each other as potential threats to survival (Anderson, 1994). Ultimately, the foundation for in-group cooperation is weak, and other strategies are used to maintain social order.

One such strategy may be norm-enforcing punishment, which has received little prior attention in research on ETV. In our community sample, norm-enforcing punishment was positively related to both ETV and committing a violent crime. Exposure to, and engagement in, violence may make individuals more comfortable with the idea of harming others—and thus more willing to punish bad behavior to maintain order. Alternatively, individuals who are exposed to, and engage in, more violence may be more familiar with the idea of using punishment to enforce norms and may have a better understanding of how punishment can be used prosocially to enhance cooperation in society. Since these proposed mechanisms should operate in any type of violent context (intergroup or otherwise), the positive relationship between violence and norm-enforcing punishment may generalize to more contexts than the relationship between violence and cooperation.

Before concluding, several methodological and conceptual limitations should be noted. First, the study captures exposure to, and committing of, actual incidents of violence in respondents' lives, whereas cooperation and norm-enforcing punishment are measured using economic games in the laboratory. However, previous research shows that there is a correlation between behavior in economic games and behavior in the world (Benz & Meier, 2008; Franzen & Pointner, 2013; Stoop, 2014). Additionally, the decisions participants made in the laboratory were consequential; they had the opportunity to earn

up to $20 through their choices in the games, which is a relatively large amount of money considering the modal participant in the study earns less than $41 per day and is unemployed. Second, we used a nonprobability sampling method (i.e., convenience and purposive), and all participants were from neighborhoods within New Haven, CT. Future work should test the generalizability of these findings to other contexts of community violence nationally and internationally.

Finally, previous research suggests that exposure to war violence is positively associated with prosociality toward fellow in-group members, but not toward out-group members (Bauer et al., 2016). The cooperation and norm-enforcing punishment games used in this study take place in an in-group context (someone from your community like you). Thus, the study cannot speak to how chronic violence would affect cooperation and norm-enforcing punishment in relation to out-group members. This is an interesting avenue for future research, along with examining whether this relationship between community violence and norm-enforcing punishment extends to intergroup violence.

Overall, results from the present study suggest that exposure to and engagement in violent behavior relates to greater use of norm-enforcing punishment. Norm-enforcing punishment may represent a way in which violence brings order to a society, particularly in places where the rule of law is weaker, like in conflict, postconflict, and other chronically violent settings.

Authors' Note

The study was designed by S. Estrada, M. N. Stagnaro, Y. Dunham, D. Rand, and A. Baskin-Sommers. Data were collected by S. Estrada and A. Baskin-Sommers. The data were analyzed by R. Littman, D. Rand, and A. Baskin-Sommers. The manuscript was drafted by R. Littman, D. Rand, and A. Baskin-Sommers and revised by all of the authors.

Declaration of Conflicting Interests

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Supplemental Material

The supplemental material is available in the online version of the article.

Note

1. $ refers to US dollars throughout the article.

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