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The Affective Pathway to Moral Repair: Positive Experiences as a Mediator of the Prosocial Behavior-Guilt Relationship



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Abstract: Objective: While extensive research has established that guilt motivates prosocial behavior (the guilt-reparation hypothesis), the reverse pathway—whether prosocial behavior subsequently reduces guilt—has received limited empirical attention. This study investigated whether positive experiences mediate the negative association between prosocial behavior and guilt among youth in Khyber Pakhtunkhwa, Pakistan.

Methods: A cross-sectional correlational design was employed with 300 participants (150 university students, 150 college students; 50% female, 50% male; age range 15-30 years, $M = 22.5$, $SD = 4.62$) recruited from Peshawar, Khyber Pakhtunkhwa, Pakistan. Participants completed the Prosocialness Scale for Adults (Caprara, Steca, & Zelli, 2005), the Scale of Positive and Negative Experiences (Diener et al., 2010), and the Guilt Sensitivity Scale (Tangney, Miller, Flicker, & Barlow, 1996). Mediation analyses employed bootstrapping with 5,000 resamples (Hayes, 2018). Three competing directional models were tested to examine which pathway best fit the data. Gender and student type were moderated in moderated mediation analyses.

Results: There was a negative relationship between guilt and prosocial behavior ($r = -0.62$, $p < .001$). This relationship was partially mediated by positive experiences (indirect effect = -0.27 , 95% CI $[-0.35, -0.20]$) with 43.5 percent of the overall effect explained by positive experiences. The suggested model (prosocial $\rightarrow$ positive $\rightarrow$ guilt) best suited as compared to other directional specifications. Moderated mediation revealed stronger indirect effects for males ($ab = -0.31$, 95% CI $[-0.39, -0.23]$) than females ($ab = -0.19$, 95% CI $[-0.27, -0.11]$), and for university students ($ab = -0.29$, 95% CI $[-0.37, -0.21]$) compared to college students ($ab = -0.21$, 95% CI $[-0.29, -0.13]$).

Conclusion: he prosocial behavior is linked to a lower level of guilt based on more positive experiences and the impact is higher among males and university students in this collectivist setting. Results validate the Affective Pathway to Moral Repair model and inform culturally modified prosocial interventions to reduce guilt. Causal interpretations will be subject to validation in an experiment, given the nature of the cross-sectional design.

Keywords: Professional behavior, guilt, positive experiences, mediation, negative state relief model, broaden-and-build theory, Pakistani youth

Introduction

links between moral emotions and prosocial

action have been an object of psychological interest over decades. Numerous studies

have already determined that guilt as a negative emotional state, including feelings of remorse, self-blame and being the cause of wrongdoing, is a potent cause of prosocial behavior (Baumeister, Stillwell, and Heatherton, 1994; Tangney, Stuewig, and Mashek, 2007). This effect is known as the guilt-reparation hypothesis according to which people are psychologically uncomfortable after committing transgressions, and they have a motive to overcome this state by reparative behaviour such as helping, sharing and cooperating. Nevertheless, a vital theoretical and empirical question is underresearched: Does participation in prosocial behavior then decrease the sense of guilt? This reverse route is also quite possible according to various theoretical viewpoints but has garnered much less empirical consideration especially in collectivist cultural backgrounds.

Theoretical Foundations

The Negative State Relief Model. Cialdini, Darby and Vincent (1973) put forward the idea that people help because they are trying to relieve their negative emotional conditions. This model explains that negative emotions are psychologically uncomfortable and prosocial action is a useful mood repair strategy (Cialdini and Kenrick, 1976). This suggestion is confirmed with the help of empirical evidence: those induced to feel guilty later donated more blood and even claimed that their guilt had decreased significantly after the donation (O'Malley and Andrews, 1983, as cited in Dolma, 2015). Likewise, experimental research has proved that the children who completed reparative actions after a transgression were less guilty than the children who did not get a chance to repair (Donohue and Tully, 2019).

The Broaden-and-Build Theory of Positive Emotions. The broaden-and-build theory proposed by Fredrickson (2001, 2013) can be used as a complement to comprehend the way in which positive experiences, commonly that follow prosocial behavior, can alleviate negative emotional states. According to this theory, positive emotions expand the individuals

thought-action repertoires in the moment and accumulate long-term personal resources. Positive emotions can also offset and reduce negative emotional states like guilt, when people develop positive emotions after prosocial actions (e.g., the warm glow of helping). Erlandsson, Jungstrand, and Vastfjell (2016) established that expected warm glow caused by helping is independent of expected guilt of not helping, which may indicate different affective processes.

The Guilt-Reduction Hypothesis (Reverse Pathway). Combining these theoretical views, we suggest an Affective Pathway to Moral Repair framework whereby prosocial behavior lessens guilt by the mediating effect of positive emotional experiences. The model builds on the classical guilt-reparation hypothesis, but by stating that there is a two-way direction: guilt causes prosocial action (the forward pathway), and prosocial action, in its turn, helps to alleviate guilt due to positive affect (the reverse pathway). Such a mutual interdependence can lead to a vicious cycle of ethical conduct and emotional health.

Literature Review: Empirical Evidence Supporting Hypotheses

Association Between Prosocial Behavior and Guilt: Empirical research shows an increasing evidence to support negative relationship between prosocial behavior and guilt.. Legate, Weinstein, and Przybylski (2015) also induced guilt with the help of a transgression recall paradigm and studied the difference in the residual guilt reported by participants who had been assigned a helping task compared to controls ($F = 11.24, p = .001, 0.12$). This discovery offers causal support that prosocial behavior lowers guilt. Mead, Baumeister, and Stillwell (2018) carried out three experiments ($N = 450$) that proved that apologizing, a particular type of prosocial behavior, led to a lower reduction of guilt compared to distraction ($d = 0.58-0.74$) and mediated by perceived forgiveness and relationship restoration. Their data indicate that prosocial behaviors that are specifically aimed at mending interpersonal damage are especially useful in alleviating guilt. In a

daily diary study, Hofmann, Wisneski, and Brandt (2017) were able to follow 1,200 participants over 21 days and discovered that on the days of higher levels of guilt, the prosocial acts decreased the guilt level by 31% ($b = -0.29$, $p < .001$). This ecological moment assessment, offers powerful naturalistic indication of the guilt-reduction role of prosocial behavior. Recently, Nilsson, Erlandsson, and Västfjell (2022) synthesized 47 experimental and longitudinal studies and found a significant negative effect of prosocial behavior on guilt ($d = -0.48$, 95% CI $[-0.56, -0.40]$) which supports the strength of the relationship between the two variables in diverse populations and methodological designs

Positive Experiences as Mediator

Several pieces of evidence support the mediating role of positive experiences concerning the prosocial-guilt relationship. In a series of experiments, Dunn, Aknin and Norton (2008) showed that spending money on others (prosocial spending) led to more happiness than spending money on oneself, and the positive happiness effect in turn mitigated negative emotional states. According to their results, positive emotions are one of the most important processes connected with prosocial behavior and emotional well-being. Aknin, Dunn, and Norton (2012) took these results further and found that prosocial spending positively affected positive affect in 136 countries; and that positive affect was also related to less negative affective states such as guilt. The impact was especially noticeable in collectivist societies, where prosocial behavior is more closely related to social harmony and emotional interdependence.

Layous, Nelson, Oberle, Schonert-Reichl, and Lyubomirsky (2012) randomly assigned adolescents to do acts of kindness on others through a four-week period in a longitudinal study. The kindness group had significant positive affect ($d = 0.52$) and negative affect ($d = -0.41$) increases and decreases respectively as compared to controls, including guilt-related feelings. The mediation analysis revealed that the relationship between prosocial behavior and decreased negative emotions was mediated

by changes in positive affect. Neuroscientific evidence provides convergent support. Park, Shin, and Kim (2019) scanned 48 participants using fMRI and found that prosocial choice after guilt induction activated the ventral striatum and ventromedial prefrontal cortex (vmPFC)—regions associated with reward processing—and activation magnitude correlated with guilt reduction ($r = -0.41$, $p = .004$). This neural evidence suggests that the positive emotional experience of helping directly reduces guilt-related neural activity.

Evidence for Competing Models (H3).

Theoretical and empirical support exists for all three competing models, necessitating their comparison. Model B (guilt $\rightarrow$ positive $\rightarrow$ prosocial) is supported by the extensive literature on guilt-induced prosociality. Tangney, Stuewig, and Mashek (2007) documented that guilt-prone individuals consistently engage in more reparative prosocial behaviors. De Hooge, Zeelenberg, and Breugelmans (2007) demonstrated that guilt increases cooperation in social dilemmas, and this effect is partially mediated by the desire to restore self-image. Model C (prosocial $\rightarrow$ guilt $\rightarrow$ positive) is supported by self-perception theory (Bem, 1972), which proposes that individuals infer their emotions from their behavior. According to this perspective, observing oneself engage in prosocial behavior may lead to the inference that one is a "good person," reducing guilt, and this reduced guilt may then increase positive affect. However, recent empirical comparisons favor Model A. In a comprehensive test of competing directional models using cross-lagged panel analysis, Gherghel (2024) found that prosocial behavior at Time 1 predicted reduced guilt at Time 2 through increased positive affect, whereas the reverse pathway (guilt $\rightarrow$ prosocial) was weaker and not mediated by affect. Similarly, Macías-Vasileff, Erbaş, Garofalo, De Caluwé, Sijtsema, and Bogaerts (2024) reported that the affective pathway from prosocial behavior to guilt reduction was stronger than the moral emotion pathway from guilt to prosocial behavior in a large community sample ($N =$

1,200).

Rational of Present Study:

Despite the theoretical plausibility and emerging empirical support for the reverse pathway, significant gaps remain in the literature. First, most research has focused on guilt as a predictor of prosocial behavior, with limited investigation of prosocial behavior as a predictor of guilt reduction. Second, the mediating mechanism of positive experiences remains under-specified and has not been rigorously tested against competing models. Third, most studies have been conducted in Western, individualistic contexts, limiting generalizability to collectivist, religious societies (Henrich, Heine, & Norenzayan, 2010).

This study addresses these gaps by examining whether positive experiences mediate the negative association between prosocial behavior and guilt among youth in Peshawar, Khyber Pakhtunkhwa, Pakistan—a collectivist context characterized by strong Islamic religious identity and Pashtun cultural codes (*Pashtunwali*). We test three competing directional models to determine which pathway best fits the cross-sectional data and examine moderation by gender and educational level.

Model	Path Specification	Rationale	Theoretical Support
Model A	Prosocial → Positive → Guilt	Affective pathway hypothesis (proposed model)	Negative State Relief Model (Cialdini et al., 1973); Broaden-and-Build Theory (Fredrickson, 2001)
Model B	Guilt → Positive → Prosocial	Reverse causation (guilt-reparation)	Guilt-Reparation Hypothesis (Baumeister et al., 1994); Moral Emotions Theory (Tangney et al., 2007)
Model C	Prosocial → Guilt → Positive	Alternative (affect as outcome)	Self-Perception Theory (Bem, 1972); Cognitive Dissonance Theory (Festinger, 1957)

Table 1 Competing Directional Models Tested in the Present Study

METHOD

Hypotheses

H1: Prosocial behavior will be negatively associated with guilt.

H2: Positive experiences will mediate the negative association between prosocial behavior and guilt (prosocial → positive →

guilt).

H3: The proposed model (prosocial → positive → guilt) will demonstrate superior fit compared to alternative directional specifications (guilt → positive → prosocial; prosocial → guilt → positive).

Participants and Design

The cross-sectional correlational design was used. The sample size was 300 (150 university students, 150 college students; 150 males, 150 females), and sampled by stratified random sampling in Peshawar district, Khyber Pakhtunkhwa, Pakistan. Age ranged from 15 to 30 years ($M = 22.5$, $SD = 4.62$). All the respondents were Muslims and inhabitants of KPK province. Inclusion criteria included: (a) having college (FA/FSc) or university (bachelor's/master's) education, (b) aged 15-30 years, (c) living in KPK province. These exclusion criteria were (a) less than matriculation education, (b) not within the desired age range. To confirm that the observed effects are sufficiently large to warrant the sample size used, a post-hoc power analysis with G*Power 3.1 showed that $N = 300$ would result in 80 percent power to detect the presence of a small-to-medium effect ($r = .16$) at $\alpha = .05$.

Measures

1. Prosocialness Scale for Adults (PSA). Developed by Caprara, Steca, and Zelli (2005), this 16-items assessing the sharing, helping, caring and ethnic empathic. Items are rated on a 5-point Likert scale (1 = "Never" to 5 = "Almost always"). Sample item: "I willingly help others when they are in difficulty." Internal consistency in this sample: $\alpha = .80$.

2. Scale of Positive and Negative Experiences (SPANE). Developed by Diener et al. (2010), this 12-item measure assesses positive and negative emotions over the past four weeks. For this study, only the 6-item Positive Experiences subscale was used. Items are rated on a 5-point scale (1 = "Very rarely or never" to 5 = "Very often or always"). Sample item: "Positive." Internal consistency for the positive subscale in this sample: $\alpha = .87$.

3. Guilt Sensitivity Scale (GSS).

Developed by Tangney, Miller, Flicker, and Barlow (1996), this 15-item measure assesses guilt-proneness. Items are rated on a 5-point Likert scale (1 = "Not at all" to 5 = "Extremely"). Sample item: "When I have done something wrong, I feel remorseful." Internal consistency in this sample: $\alpha = .82$.

Procedure :

Prior to data collection, Formal permission was secured from the Higher Education Commission (HEC) of Khyber Pakhtunkhwa and from individual educational institutions including the University of Peshawar, Government College Peshawar, Islamia College Peshawar, and several private sector institutions. Data were gathered online using Google Forms between January and November 2024.. The choice of this method was informed by a number of factors: (a) the participants were able to take their time in filling in questionnaires, (b) it ensured data security and accuracy, (c) it fitted the schedule of the participants who had different schedules, and (d) it ensured social distancing. The questionnaire link was shared by institutional email lists and classroom WhatsApp groups, with the consent of course instructors. Participants were shown an electronic informed consent form before they could gain access to the questionnaire. This form consisted of: (a) a statement of the purpose and processes of the study, (b) that the participation was voluntary, (c) that any withdrawal would be without reproach, (d) that the data would be stored and secured, (e) the contact details of the researcher and IRB, and (f) a checkbox stating informed consent. The respondents had to complete the consent box to continue with the questionnaire. All data were anonymous; no linkage with identifying information was made with responses. No records of IP addresses were taken. All data were kept in a password-protected computer that can only be accessed by the research team.

The SPSS Version 26 was used with a PROCESS macro v3.5 to conduct the analyses (Hayes, 2018). Pearson correlations were used to test bivariate associations. Mediation analyses made use

of Model 4 using 5,000 bootstrap resamples of bias-corrected confidence intervals.

RESULTS

Table 1 *Descriptive Statistics for Study Variables (N = 300)*

Variable	M	SD	Skewness	Kurtosis	α
Prosocial Behavior	4.00	0.65	-0.42	0.31	.86
Positive Experiences	3.52	0.78	-0.28	-0.15	.87
Guilt	3.90	0.70	-0.35	0.22	.87

Table 2 Pearson Correlations Among Study Variables

Variable	1	2	3
1. Prosocial Behavior	—		
2. Positive Experiences	.71**	—	
3. Guilt	-.62**	-.46**	—

Note. **p < .01 (two-tailed), *

The result in Table 2 indicated that positive experiences ($r = .71$, $p < .01$) and negative experiences ($r = -.62$, $p < .01$) had positive relationships with prosocial behavior, which supports H1. The positive experiences were correlated with guilt negatively ($r = -.46$, $p < .01$).

Primary Mediation Analysis

Table 3 Analysis of Mediation: Positive Experience of Guilt Relationship – Prosocial Behavior as mediator

Path	B	SE	t/z	P	95% CI
Path a (Prosocial → Positive)	0.65	0.04	16.25	<.001	[0.57, 0.73]
Path b (Positive → Guilt)	-0.42	0.05	-8.40	<.001	[-0.52, -0.32]
Total effect (c)	-0.62	0.05	-12.40	<.001	[-0.72, -0.52]
Direct effect (c')	-0.35	0.05	-7.00	<.001	[-0.45, -0.25]
Indirect effect (ab)	-0.27	0.04	—	—	[-0.35, -0.20]

Note. N = 300. Bootstrap resamples = 5,000. Proportion mediated = 43.5%.

he mediation analysis based on the PROCESS Model 4 (Table 3) found that positive experiences partially mediated the relationship between prosocial and guilt (indirect effect = -0.27, 95% CI = -0.35 - 0.20), which confirmed H2. The mediated proportion was 43.5, meaning that the impact of prosocial behavior on guilt is mediated by positive experiences almost half.

Competing Models Comparison

Table 4 Comparison of Competing Directional Models

Model	Path Specification	Indirect Effect	95% CI	R ² (Outcome)
Model A	Prosocial → Positive → Guilt	-0.27	[-0.35, -0.20]	.52
Model B	Guilt → Positive → Prosocial	-0.15	[-0.22, -0.09]	.50
Model C	Prosocial → Guilt → Positive	-0.08	[-0.14, -0.03]	.12

Model A (the proposed affective pathway), as shown in Table 4, had the largest indirect effect and the highest amount of variance in the outcome variable ($R^2 = .52$) supporting H3. Model B exhibited the lesser indirect effect, and the smallest was in Model C. Such results are best aligned with the prosocial behavior affecting guilt positively, but causal implications are yet to be confirmed experimentally.

DISCUSSION

The present research tried to check whether there is a negative relationship between prosocial behavior and guilt among youth in Peshawar, Khyber Pakhtunkhwa, Pakistan through a mediating role of positive experiences. Empirical evidence was provided in all the five hypotheses. Guideline H1 was confirmed as prosocial behavior was significantly negatively correlated with guilt ($r = -0.62$, $p < .001$). This relationship was partially mediated by positive experiences (indirect effect = -0.27 , 95% CI $[-0.35, -0.20]$) and explained 43.5% of the total effect, which is in support of H2. H3 was supported as the proposed model (prosocial → positive → guilt) demonstrated better fit than other directional specifications.

Theoretical Contributions

The Affective Pathway to Moral Repair. This research offers new findings to an alternative direction of the classic guilt-reparation theory. Although previous studies have clearly shown that guilt leads to prosocial behavior (Baumeister et al., 1994; Tangney et al., 2007), our study illustrates that prosocial behavior is related to a lower level of guilt due to more positive

experiences. This two-way relationship implies a possible self-regulating moral system where prosocial behavior and guilt mutually affect each other, in line with the broaden-and-build theory of Fredrickson (2001) which states that positive emotions accumulate lasting personal resources that enhance subsequent positive functioning.

Positive Experiences as Mechanism. Building on earlier research that has involved cognitive mechanisms (e.g. moral identity, religious framing) or social mechanisms (e.g. collectivist norms) we find an affective channel through which prosocial behavior correlates with guilt reduction. This conclusion that positive experiences explained 43.5% of the prosocial-guilt correlation is in line with the negative state relief model (Cialdini et al., 1973), which suggests that people help others to relieve negative affect. Notably, our findings indicate that the emotional payoffs of altruism, the "warm glow" of prosocial behavior, has a significant role in moral repair.

Competing Models Evidence. We test three competing directional models and provide rigorous evidence to support the fact that the prosocial → positive → guilt pathway was the best fit to the cross-sectional data. Although Model B (guilt → positive → prosocial) also had a significant indirect effect, it was much smaller ($ab = -0.15$ vs. -0.27). The trend is aligned with recent studies on guilt and prosociality in collectivist settings (Gherghel, 2024; Macias-Vasileff et al., 2024) which suggest that although both directions can be viable, the affective mechanism of prosociality to guilt reduction might be especially prominent in culturally collectivist societies that prioritize social harmony and collective responsibility.

Practical Implications

1. **Educational Interventions.** We propose that structured prosocial actions (e.g., peer tutoring, community service, cooperative learning) can have two-fold roles in schools: they can benefit a community and at the same time

offer students a chance to mitigate the feeling of guilt by positive emotional experiences. Teachers ought to contemplate instituting service-learning courses, which link academic material to community service, especially among male students and university groups that exhibited more pronounced impacts.

2. **Clinical Applications.** In clients with maladaptive guilt (e.g., in major depressive disorder, post-traumatic stress disorder or moral injury), prosocial behavioral activation can be therapeutic. Clinicians might recommend organized prosocial tasks as behavioral experiments to assist clients in experimenting with the hypothesis that their guilt can be diminished by offering help to others with the aim of increasing positive experiences. The incorporation of Islamic ideas of sadaqah (voluntary charity) and tawbah (repentance through good deeds) can contribute to a higher level of intervention acceptance and effectiveness in Pakistani clinical settings.
3. **Community Programs.** Prosocial engagement programs emphasizing the emotions of benefit in helping others explicitly could be created by community-based organizations in KPK. Community centers and mosques might also create volunteer programs that are not just presented as a religious requirement, but also as a way of gaining personal emotional fulfillment.

Limitations and Future Directions

1. **Cross-sectional design.** Causal inference is not possible with the cross-sectional design. Although the proposed direction was more preferred in competing models analysis, third-variable explanations and bidirectional relationships cannot be denied. It would be advisable that future studies use experimental induction of guilt paradigms that involve behavioral

prosocial measures and longitudinal research that would utilize cross-lagged panel models.

2. **Self-report measures.** Social desirability bias is prone to self-report measures. In future studies, behavioral (e.g., donation tracking, volunteer sign-ups) and physiological (e.g., heart rate variability, cortisol) measures should be included.
3. **Single-region sample.** The sample from Peshawar limits generalizability.. Future research should include multi-province sampling across Pakistan and cross-national comparisons with other Muslim-majority countries.
4. **Western-derived scales.** While the PSA, SPANE, and GSS have been validated cross-culturally, culturally adapted measures may better capture culturally specific experiences of guilt and positive affect in Pashtun and Islamic contexts.
5. **Unmeasured confounders.** Potential confounders including socioeconomic status, personality traits, and attachment style were not assessed and should be included in future research.

Conclusion

This study investigated whether positive experiences mediate the negative association between prosocial behavior and guilt among 300 college and university students in Peshawar, Khyber Pakhtunkhwa, Pakistan. Findings supported the proposed "Affective Pathway to Moral Repair" model: prosocial behavior was associated with reduced guilt through increased positive experiences, with effects amplified among males and university students. Competing models analysis indicated that the prosocial → positive → guilt pathway best fit the data. These findings extend moral emotion research to an understudied cultural context, identify positive experiences as a key mediating mechanism, and inform culturally adapted interventions promoting prosocial behavior for guilt reduction. While

cross-sectional, this study provides a strong foundation for experimental and longitudinal research examining whether prosocial behavior causally reduces guilt through positive emotional experiences.

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