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Apology and national identity play a role in forgiveness toward Syrian refugees in Turkey

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Abstract

This study investigates how apology and social identity jointly shape forgiveness in intergroup contexts involving refugees. Drawing on Social Identity Theory, the research focused on Turkish university students' reactions to a minor act of incivility committed by either an in-group (Turkish) or out-group (Syrian) individual, with or without an apology. A total of 144 participants were randomly assigned to one of four experimental conditions in a 2 (apology: yes vs. no) × 2 (source of behavior: Turkish vs. Syrian) design. After reading the scenario, participants reported their willingness to forgive, along with measures of in-group identification. The results showed that in-group offenders were forgiven more readily than out-group offenders, and that apologies significantly increased forgiveness. The interaction of apology and group membership indicated that offenses committed by Turkish offenders who apologized elicited the highest forgiveness levels. In addition, stronger in-group identification predicted lower forgiveness across conditions, suggesting a direct negative effect rather than the hypothesized moderation. These findings highlight the central roles of interpersonal cues and social identity in shaping forgiveness in migration contexts. The study contributes to understanding the psychological mechanisms that underlie host–refugee relations and offers insights for interventions aiming to promote intergroup harmony and social cohesion.

Keywords Forgiveness, Apology, Social identity, Intergroup relations, Syrian refugees, Identification

1 Introduction

Forgiveness is a key psychological mechanism for repairing interpersonal relationships following transgressions. It involves a conscious decision by the victim to let go of anger and resentment and to adopt a more positive view of the offender. A substantial body of research has examined the factors that influence forgiveness, with particular emphasis on interpersonal variables such as apologies and individual dispositions [11, 15, 27].

While early studies focused on retaliatory responses such as revenge or avoidance [3, 36], later work has highlighted the role of apology in reconciliation. Apologies—through expressions of remorse and responsibility—can enhance empathy and perceptions of sincerity, thereby promoting forgiveness [9, 17, 32, 33].



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In addition to interpersonal processes, the role of social identity in forgiveness has received increasing attention. According to Social Identity Theory [39], individuals categorize themselves and others into social groups, which in turn shapes their attitudes and behaviors. This categorization often leads to in-group favoritism and out-group bias, particularly in interpersonal evaluations such as forgiveness [22, 23]. Research suggests that offenses committed by in-group members are more readily forgiven due to motivations to preserve group harmony [4, 29], whereas out-group transgressors may face greater skepticism and less empathy [2, 5].

Importantly, the degree to which individuals identify with their group can shape these forgiveness dynamics. Higher in-group identification has been linked to reduced willingness to forgive out-group members, especially when social identity threats are salient [1, 40]. These effects may be amplified when the offense lacks a mitigating gesture such as an apology [35]. Beyond its direct association with forgiveness, identification may also function as a boundary condition that alters the strength of the effect of group membership. In particular, the difference between in-group and out-group offenders may become more pronounced at higher levels of identification.

Despite these findings, there is still limited empirical work that examines how group membership, apology, and identification interact to influence forgiveness in specific intergroup contexts. In Turkey, the arrival of over three million Syrian refugees since the onset of the Syrian civil war has reshaped intergroup relations and public discourse [28]. While prior research has investigated attitudes toward Syrian refugees and perceived threats [8], less is known about how everyday transgressions, such as incivility, are perceived through the lens of group identity and whether apologies mitigate intergroup tension.

This study addresses this gap by exploring how Turkish participants respond to an uncivil behavior committed by either an in-group (Turkish) or out-group (Syrian) individual, with or without an apology. Using a scenario-based design with randomized conditions, the study examines how group membership and apology influence forgiveness, and whether identification with the in-group moderates these effects. By focusing on a realistic social interaction—cutting in line at a store—this research aims to provide contextually relevant insights into the interplay of interpersonal and intergroup processes in forgiveness.

1.1 Theoretical framework and model contribution

According to Social Identity Theory [39], individuals derive part of their self-concept from their group memberships. Strong identification with the ingroup often motivates the protection of group boundaries and can intensify negative reactions toward out-group offenders. Prior studies suggest that individuals who identify more strongly with their ingroup are inclined to evaluate outgroup members more harshly and show less willingness to forgive their transgressions [6, 31].

In this sense, ingroup identification is not only a direct predictor of forgiveness but may also shape the strength of the relationship between offender's group membership and forgiveness. The difference in forgiveness granted to ingroup versus outgroup offenders is expected to widen when identification is high, while this gap may narrow among individuals with weaker identification.

Guided by this framework, the present study examines whether identification moderates the link between source of behavior (ingroup vs. outgroup offender) and forgiveness. Apology is also included as a covariate given its well-established role in promoting forgiveness.

1.2 Research aims and hypotheses

The aim of the study is to investigate how forgiveness is shaped by the group membership of the transgressor (in-group vs. out-group), the presence or absence of an apology, and the participant's level of in-group identification. Based on the theoretical framework, we tested the following hypotheses:

H1 An uncivil behavior committed by an in-group (Turkish) member will be forgiven more than the same behavior committed by an out-group (Syrian) member.

H2 An apology following the uncivil behavior will lead to higher levels of forgiveness than when no apology is given.

H3 The combined effect of an in-group transgressor and an apology will result in the highest forgiveness levels (interaction effect).

H4 In-group identification will moderate the effect of source of behavior on forgiveness, such that out-group offenses would be forgiven less, particularly at higher levels of in-group identification (Fig. 1).

2 Method

2.1 Participants

A total of 144 university students selected through convenience sampling participated in the study (see Table 1 for condition distribution). Participants were recruited from two public universities in Turkey and included both undergraduate and associate degree students. These institutions host students from various regions of the country, which provided a degree of diversity within the sample. Participants were randomly assigned to one of the conditions in a 2 (apology: yes–no) $\times$ 2 (source of behavior: Syrian–Turkish)

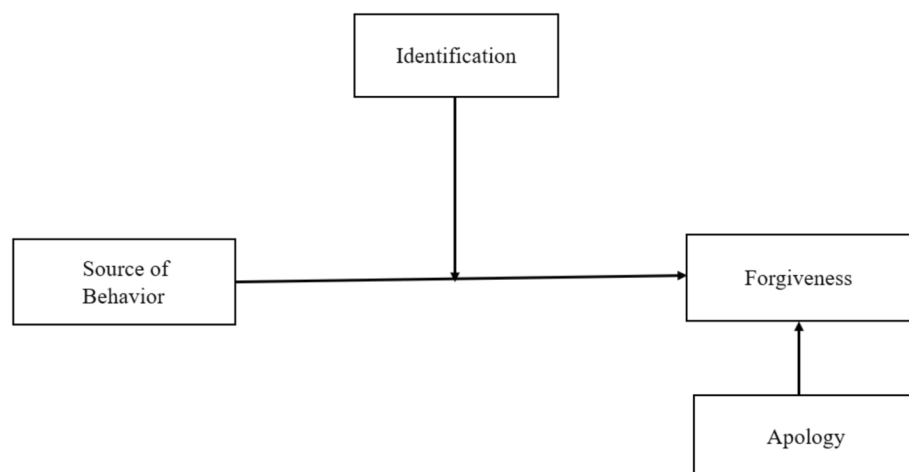


Fig. 1 Conceptual model (apology as a covariate)

Table 1 Research design and sample distribution

		Source of behavior	
		Syrian	Turkish
Apology	Yes	43	33
	No	35	33

Participants were randomly assigned to one of four groups in a 2 (group membership: Syrian vs. Turkish) × 2 (apology: yes vs. no) factorial design

factorial design. Sample size was determined using G*Power software [13]. An effect size similar to the experimental design (e.g., Cohen’s $f = 0.50$, which corresponds to $\eta^2 = 0.25$; [7]) was expected, therefore, we targeted a statistical power of $(1 - \beta) = 0.80$ at a significance level of 0.05. This analysis suggested a minimum sample size of 128 participants. To account for potential exclusions due to incomplete data or participant non-compliance, we oversampled, resulting in a final sample of 144 participants.

3 Materials

Neutralization task: In the neutralization task, all participants were asked to read a text carefully for one minute. The text contained sentences comprising 86 neutral words within the context of everyday life events. The goal of the neutralization task is to focus participants' attention on a neutral task, thereby neutralizing any potential positive or negative emotional states. Findings in the literature suggest that this task helps to bring participants' moods to a similar, neutral level [19, 20].

Single-item mood measurement: Following the neutralization task, a single-item measure of mood was used for mood neutralization control, asking participants, "How do you feel today?" Participants were asked to rate how they felt using a 5-point Likert scale.

Demographic information and consent form: Participants were asked to respond to questions regarding their demographic information, including age, sex, education level, and the place where they have spent most of their life. At the beginning of the study, participants were provided with an informed consent form containing explanations about the research and the researcher. This form included information about the research topic, voluntary participation, and the principle of confidentiality. Participants who stated their willingness to participate in the study continued with the research.

Manipulation of incivility behavior through scenario: The researcher created the scenarios used in this research. Participants were presented with a hypothetical scenario based on their randomly assigned condition. To select the incivil behavior for the hypothetical scenario, an open-ended question was asked to 10 individuals: "What do you think are examples of incivility in everyday life?" Based on their responses, an 18-item, 11-point scale was created. From the responses of 78 participants, the behavior they identified as the most uncivil (i.e., "People cutting in line when I am waiting") was chosen for the hypothetical scenario. The content of the scenarios will vary according to the conditions of the study. In the scenarios, the incivility that participants experience during checkout at a store (i.e., someone cutting in line) will be described based on the source of the behavior or the person exhibiting it (Syrian-Turk). Additionally, as one of the variables in the study, the behavior of apologizing will be depicted in the scenario, either as an apology being given or not after the incivility. (see Appendix 1).

Manipulation check questions: To assess the impact of the manipulation on participants, the researchers created a form. After the manipulation, participants evaluated their perception of error and intent using a two-item, 11-point Likert scale (0 = not at all,

10 = completely). The items were: *"To what extent was Person A's (in the scenario) behavior wrong?"* and *"To what extent was Person A's (in the scenario) behavior intentional?"*. Higher scores indicated greater perceived wrongness/error and intentionality.

Single-item forgiveness measure: Participants assessed their level of forgiveness regarding the hypothetical scenario using a single-item, 11-point Likert scale with the question: *"To what extent do you forgive Person A for their behavior?"*

Identification measure: Following the momentary mood assessment, participants answered two single-item identification questions prepared by the researchers. First, they were asked to select the option that best represents their identification level with the question: *"To what extent do you identify as Turkish? Please mark the option that best suits you from the images above"* (see Appendix 1). Second, they answered a similar question: *"To what extent do you identify as Turkish?"* (see Appendix 1).

Participants rated these questions on a 7-point scale ranging from 0 to 6. The scores from these questions reflect the strength of an individual's identification with Turkish identity. Higher scores indicate a stronger identification with Turkish identity.

3.1 Procedure and data collection

Participants were recruited using a convenience sampling method and were randomly assigned to one of four conditions: [(1) behavior source: Turkish or Syrian; (2) apology: yes or no]. Random assignment was conducted through the online survey platform *PsyToolkit.org*. The survey link was distributed via WhatsApp groups. No exclusion criteria were applied. Additionally, the study was approved by the Ethics Committee for Human Research in Social Sciences of a public university (Protocol No. 2023/149).

Data collection was conducted using *PsyToolkit.org* [37, 38]. Participants were first presented with an e-consent form detailing the study's content and purpose. After voluntarily consenting to participate, they were given a neutralizing task to regulate their mood before exposure to the experimental conditions. A single-item momentary mood assessment was then administered.

Next, participants read a scenario manipulating the independent variables (apology and behavior source). After reading the scenario, they answered manipulation check questions assessing their perception of the behavior's intentionality and severity. Following this, they completed a survey measuring the dependent variable (forgiveness), emotional responses, demographic information, and the moderating variable (identification).

After completing all measures, participants were thanked for their participation, and the study was concluded. Data were collected online via *PsyToolkit.org* between October 2023 and December 2024.

3.2 Data analysis method

In this study, SPSS 23 programme was used for statistical data analysis. Descriptive statistics were used to organise the data and to determine the central and dispersion measures, and two-way analysis of variance was used in data analysis. Moderation analysis was conducted to test the moderating role of identification in the relationship between the source of the behaviour and forgiveness. In these analyses, the PROCESS plug-in (version 3.5) developed by Hayes and used in SPSS software was preferred [21].

4 Results

The categorical variables used in the study were numerically coded for statistical analyses. Specifically, in the condition of the behavior source, $1 = \text{Turkish}$ and $2 = \text{Syrian}$, while in the apology condition, $0 = \text{No Apology}$ and $1 = \text{Apology}$. This coding ensured that the variables were appropriately structured for statistical modeling and analysis.

4.1 Neutralization control and immediate mood measurement

To neutralize participants' moods before the manipulation, they were given a reading task, filler items, and an immediate mood measurement. Participants rated their mood on a 5-point Likert scale. A two-way ANOVA analysis revealed that the apology variable did not show a significant difference in mood, $F(1, 139) = 0.24$, $p > 0.05$. However, the behavior source variable did show a significant difference in mood, $F(1, 139) = 6.36$, $p < 0.05$. All participants' overall mean mood score was $M = 3.28$, indicating a neutral level. Thus, the pre-manipulation mood neutralization was deemed successful.

4.2 Descriptive statistics

The descriptive statistics for the study variables, including means and standard deviations (SD), are presented in Table 2. Following this, the results of the ANOVA tests related to the hypotheses are presented in order.

4.3 Testing of hypotheses

Hypothesis 1: A rude behavior exhibited by a Turkish individual (in-group) will be forgiven more than the same behavior exhibited by a Syrian individual (out-group).

A two-way analysis of variance (ANOVA) was conducted to examine the effect of the source of rude behavior (Turkish-Syrian) on forgiveness. The results are presented in Table 3. Participants who were subjected to rude behavior by a Turkish individual had higher forgiveness levels ($M = 6.62$) compared to those who experienced the same behavior from a Syrian individual ($M = 4.06$), $F(1, 140) = 50.08$, $p < 0.001$, $\eta^2 = 0.26$. This finding

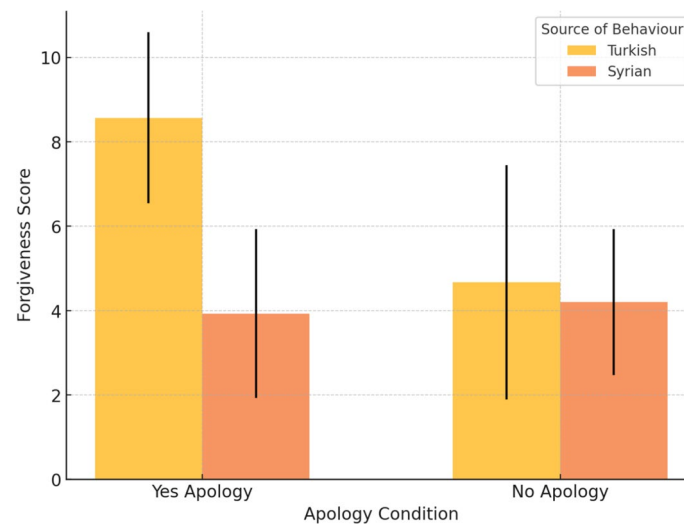
Table 2 Descriptive characteristics of participants ($n = 144$)

Descriptive characteristics		n (%)
Sex	Female	114 (79.2%)
	Male	30 (20.8%)
Age ($M \pm SD$) 21.85 ± 2.94		
Class	1	10 (6.9%)
	2	38 (26.4%)
	3	93 (64.6%)
	4	3 (2.1%)
Where he/she spent most of his life	Metropolitan	54 (37.5%)
	Province	46 (31.9%)
	District	31 (21.5%)
	Village-Town	13 (9%)
Region where he/she spent most of his/her life (in Turkey)	Mediterranean Region	10 (6.9%)
	Eastern Anatolia Region	4 (2.8%)
	Aegean Region	7 (4.9%)
	Southeastern Anatolia Region	3 (2.1%)
	Central Anatolia Region	53 (36.8%)
	Black Sea Region	36 (25%)
	Marmara Region	31 (21.5%)
Total		144 (100%)

Table 3 Effects of apology and source of behaviour on forgiveness

	Source of behaviour:Turkish				Source of behaviour:Syrian			
	Yes apology		No apology		Yes apology		No apology	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Forgiveness	8.57	2.03	4.67	2.78	3.93	2.00	4.20	1.73

M Mean, *SD* Standard deviation

**Fig. 2** Forgiveness scores by apology and source of behaviour

indicates that the source of the behavior, particularly when it belongs to the in-group (Turkish in this study), significantly increases forgiveness.

Hypothesis 2: Participants who received an apology after rude behavior will forgive more than participants who did not receive an apology after rude behavior. A two-way analysis of variance (ANOVA) was used to examine the effect of an apology (yes–no) on forgiveness. The results are presented in Table 3.

The forgiveness levels of participants who received an apology after rude behavior ($M = 6.25$) were found to be higher compared to participants who did not receive an apology after rude behavior ($M = 4.43$), $F(1,140) = 117.80$, $p < 0.001$, $\eta^2 = 0.15$; this indicates that apologizing significantly increases forgiveness.

Hypothesis 3: Participants exposed to impolite behavior by a Turkish person and receiving an apology will forgive more. (Interaction effect). A two-way analysis of variance (ANOVA) was used to examine the effect of the interaction between the presence or absence of an apology after impolite behavior (yes–no) and the source of the behavior (Turkish–Syrian) on forgiveness. The results are presented in Table 3.

The two-way interaction was found to be significant, $F(1,140) = 33.46$, $p < 0.001$, $\eta^2 = 0.19$. In the hypothetical scenarios, participants exposed to an apology after impolite behavior by a Turkish person had the highest level of forgiveness ($M = 8.58$) compared to other conditions (Fig. 2).

Hypothesis 4—Moderation Analysis: It was hypothesized that in-group identification would moderate the effect of source of behavior on forgiveness, such that out-group offenses would be forgiven less, particularly at higher levels of in-group identification. To test this, a moderation analysis was conducted using PROCESS (version 3.5, Model

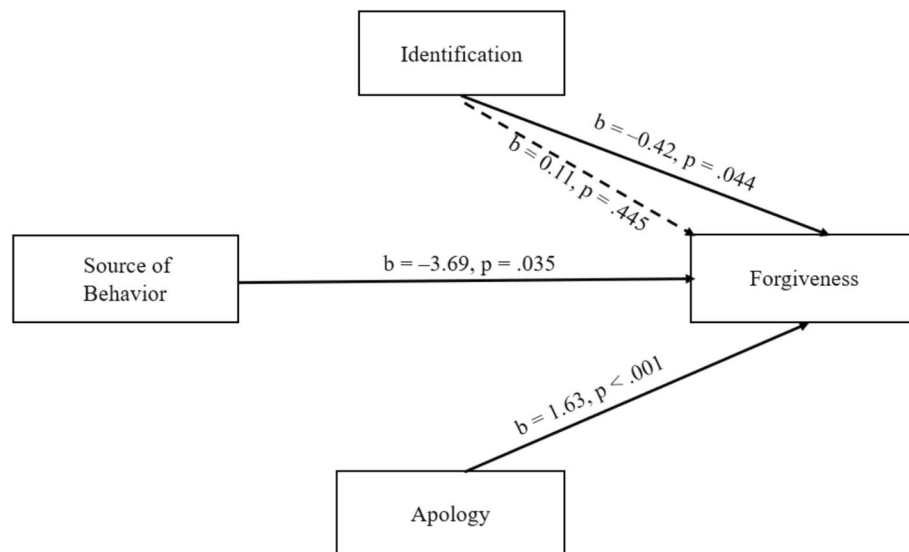


Fig. 3 Tested moderation model with coefficients

Table 4 Results of moderation analysis (DV = Forgiveness)

Predictor	b	SE (HC3)	t	p	95% CI (LL)	95% CI (UL)
Constant	12.91	2.36	5.48	<0.001	8.26	17.57
Source of behavior (X)	-3.69	1.73	-2.13	0.035	-7.12	-0.26
Identification (W)	-0.42	0.20	-2.03	0.044	-0.82	-0.01
Source × identification	0.11	0.15	0.77	0.445	-0.18	0.40
Apology (covariate)	1.63	0.41	4.01	<0.001	0.83	2.43

b = unstandardized regression coefficient; SE (HC3) = heteroscedasticity-consistent standard error. Source of behavior was coded 1 = Turkish, 2 = Syrian

1), with source of behavior as the independent variable, forgiveness as the dependent variable, identification as the moderator, and apology as a covariate. The tested model is shown in Fig. 3.

The results, presented in Table 4, revealed significant main effects of source of behavior, identification, and apology. Offenses committed by out-group (Syrian) members were forgiven less than those by in-group (Turkish) members ($b = -3.69$, $p = 0.035$). Higher identification was also associated with lower forgiveness ($b = -0.42$, $p = 0.044$), while apology increased forgiveness ($b = 1.63$, $p < 0.001$).

By contrast, the interaction between source of behavior and identification was not significant ($b = 0.11$, $p = 0.445$, 95% CI [-0.18, 0.40]). This suggests that identification did not moderate the relationship between source of behavior and forgiveness. Instead, identification exerted a direct negative influence on forgiveness across conditions. Supporting this, a correlation analysis showed that stronger in-group identification was related to lower forgiveness ($r = -0.34$, $p < 0.001$).

Note. Unstandardized regression coefficients (b), heteroscedasticity-consistent standard errors (HC3), and p -values are reported. The Source × Identification interaction was not significant and is represented with a dashed line.

5 Discussion

This study, conducted with Turkish university students, examined the effect of apologizing for rude behavior and the source of that behavior (Turkish or Syrian) on the forgiveness process, while also testing the potential moderating role of identification. Although the findings did not support the expected moderation effect, they revealed that identification had a direct negative association with forgiveness, indicating that stronger ingroup identification made participants less forgiving overall. Despite being based on a single experimental design, this study makes a noteworthy contribution by demonstrating the direct influence of identification rather than its moderating role, thereby extending the application of Social Identity Theory to intergroup forgiveness dynamics within the Turkish–Syrian context.

The results are consistent with previous research (e.g., [14, 24]) and indicate that apologizing for rude behavior increases forgiveness levels (H2 accepted). Apologizing facilitates forgiveness by enabling the victim to perceive the offender's remorse and interpret their intentions more positively. This mechanism, known as the "Apology Effect," is supported by research demonstrating that apologies enhance perceptions of relational value and promote empathy, which in turn fosters forgiveness [16]. Our findings reveal a significant increase in forgiveness levels when an apology is offered. However, the effect of an apology was found to vary depending on the source of the rude behavior.

Within the social identity framework, the efficacy of an apology in promoting forgiveness differs depending on whether the offender is an in-group (Turkish) or out-group (Syrian) member. Prior studies suggest that apologies from in-group members are generally more effective, as they reinforce group cohesion and trust [30].

One of the most striking findings of this study is the impact of the social identity of the person exhibiting rude behavior on the forgiveness process. The results indicate that rude behavior committed by a Turkish individual is more readily forgiven compared to the same behavior exhibited by a Syrian individual (H1 accepted). This finding aligns with Social Identity Theory [39], which posits that individuals are more inclined to forgive in-group members while evaluating out-group members more critically [22]. The greater likelihood of forgiving in-group members may stem from an evolutionary mechanism aimed at preserving in-group cohesion. Research suggests that in-group favoritism is a widely observed phenomenon in which individuals tend to cooperate more strongly with members of their own group than with outsiders [26]. This tendency may also manifest in forgiveness behaviors, where individuals are more inclined to forgive in-group transgressors to maintain social harmony and group stability [18].

However, factors shaping intergroup forgiveness processes extend beyond social identity alone. Forgiveness is also influenced by social norms, external narratives, and individual experiences. Specifically, people's perceptions of intergroup relations, shaped by media, political discourse, or socio-economic concerns, may act as indirect determinants of forgiveness levels. For instance, media portrayals or political rhetoric can associate certain groups with specific stereotypes, negatively affecting forgiveness toward out-group members. Similarly, economic uncertainty and resource competition have been shown to influence the perception of out-group members as more threatening [12, 39].

In this context, our findings suggest that variations in forgiveness levels between in-group and out-group members are not solely a function of social identity but are also

shaped by individuals' social environments and the narratives to which they are exposed. This highlights the necessity of a multidimensional approach to understanding forgiveness, incorporating both social identity factors and broader socio-cultural influences.

These findings offer important implications for social cohesion and integration policies. In particular, they underscore the need for social psychology-based interventions to reduce intergroup prejudice and facilitate forgiveness. Programs designed to enhance intergroup interaction, promote empathy, and encourage reciprocal apology processes could contribute to improving intergroup relations [25]. Furthermore, rather than emphasizing social identity differences, focusing on shared identities and common values may help individuals evaluate out-group members more positively [10].

6 Limitations and future research

This study has some limitations. Firstly, the study participants were university students, which limits the generalizability of the findings to a broader population. Participants were recruited from two public universities in Türkiye and included both undergraduate and associate degree students from different regions of the country. While this provided some diversity within the sample, the findings may not be fully representative of the wider population. Future research would benefit from including individuals from different age groups and social contexts. Additionally, this study did not examine the content of the apology in detail. Future research could explore the differential effects of sincere apologies versus strategic (mandatory) apologies on the forgiveness process [34]. Moreover, since forgiveness is a dynamic process that may evolve over time, conducting longitudinal studies to assess the long-term effects of apologies on forgiveness would provide deeper insights into the mechanisms involved. Finally, this study did not control for participants' political views or general attitudes toward immigrants, which could potentially influence their forgiveness decisions. Another limitation of the study is its reliance on a single experimental design. While this may limit the generalizability of the findings, the robust manipulation checks, neutralization procedures, and statistically powered sample strengthen the internal validity of the results. To build on these findings, future studies could employ a multi-study design including different measures of forgiveness (e.g., behavioral indicators), longitudinal approaches to assess forgiveness over time, and diverse samples beyond university students. Additionally, replicating the model in different intergroup contexts (e.g., ethnic, religious, or political groups) could further validate and refine the theoretical framework proposed in this study. Future research could investigate how these factors shape responses to apologies and forgiveness outcomes.

7 Conclusion

This study has highlighted the important roles of apologizing and the source of behavior/social identity in the forgiveness process. The findings show that individuals are more likely to forgive in-group members and tend to approach out-group members with more distance. In addition, stronger in-group identification was found to directly reduce forgiveness, but it did not moderate the relationship between group membership and forgiveness. These findings emphasize the importance of social psychology-based interventions in improving intergroup relations and promoting forgiveness. Academic research and social policymakers need to consider these dynamics to enhance social integration processes.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1007/s44202-026-00601-1>.

Supplementary Material 1.

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None.

Author contributions

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by NP and HC. The first draft of the manuscript was written by NP and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request. Due to the nature of the data (human subjects and ethical constraints), publicly sharing the full dataset is restricted.

Declarations

Ethics approval and consent to participate

All procedures involving human participants were conducted in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments. The study was approved by the Ethics Committee for Human Research in Social Sciences of Bolu Abant İzzet Baysal University (Protocol No. 2023/149).

Informed consent

Informed consent was obtained electronically from all individual participants prior to their participation in the study. Participation was voluntary, and participants were informed that they could withdraw at any time without penalty.

Consent to publication

Not applicable. This study does not include any identifying images or personal/clinical data requiring consent for publication.

Competing interests

The authors declare no competing interests.

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References

1. Bağcı SC, Stathi S, de Golec Zavala A. Social identity threat across group status: links to psychological well-being and intergroup bias through collective narcissism and ingroup satisfaction. *Cult Divers Ethn Minor Psychol*. 2023;29(2):208–20. <https://doi.org/10.1037/cdp0000509>.
2. Berndsen M, Hornsey M, Wohl M. The impact of a victim-focused apology on forgiveness in an intergroup context. *Group Process Intergroup Relat*. 2015;18:726–39. <https://doi.org/10.1177/1368430215586275>.
3. Bradfield M, Aquino K. The effects of blame attributions and offender likableness on forgiveness and revenge in the workplace. *J Manage*. 1999;25(5):607–31. <https://doi.org/10.1177/014920639902500501>.
4. Brewer MB. The psychology of prejudice: ingroup love or outgroup hate? *J Soc Issues*. 1999;55(3):429–44. <https://doi.org/10.1111/0022-4537.00126>.
5. Brown R, Wohl M, Exline J. Taking up offenses: secondhand forgiveness and group identification. *Pers Soc Psychol Bull*. 2008;34:1406–19. <https://doi.org/10.1177/0146167208321538>.
6. Cehajic S, Brown R, Castano E. Forgive and forget? Antecedents and consequences of intergroup forgiveness in Bosnia and Herzegovina. *Political Psychol*. 2008;29(3):351–367. <https://doi.org/10.1111/j.1467-9221.2008.00634.x>.
7. Cohen J. *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates; 1988.
8. Çoksan S, Erdugan C, Öner-Özkan B. The common other Syrian: the Syrian refugee representation in the context of social identity and realistic threat; 2020. <https://doi.org/10.31234/osf.io/3ftgw>.
9. Darby BW, Schlenker BR. Children's reactions to apologies. *J Pers Soc Psychol*. 1982;43(4):742–53. <https://doi.org/10.1037/0022-3514.43.4.742>.
10. Dovidio JF, Gaertner SL, Saguy T. Commonality and the complexity of “we”: social attitudes and social change. *Pers Soc Psychol Rev*. 2009;13(1):3–20. <https://doi.org/10.1177/1088868308326751>.
11. Eaton J, Struthers CW. The reduction of psychological aggression across varied interpersonal contexts through repentance and forgiveness. *Aggress Behav*. 2006;32(3):195–206. <https://doi.org/10.1002/ab.20119>.
12. Esses VM, Medianu S, Lawson AS. Uncertainty, threat, and the role of the media in promoting the dehumanization of immigrants and refugees. *J Soc Issues*. 2013;69(3):518–36. <https://doi.org/10.1111/josi.12027>.
13. Faul F, Erdfelder E, Lang AG, Buchner A. G* power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods*. 2007;39(2):175–91. <https://doi.org/10.3758/BF03193146>.

14. Fehr R, Gelfand MJ. When apologies work: how matching apology components to victims' self-construals facilitates forgiveness. *Organ Behav Hum Decis Process*. 2010;113(1):37–50. <https://doi.org/10.1016/j.obhdp.2010.04.002>.
15. Fincham FD. The kiss of the porcupines: from attributing responsibility to forgiving. *Pers Relat*. 2000;7(1):1–23. <https://doi.org/10.1111/j.1475-6811.2000.tb00001.x>.
16. Forster DE, Billingsley J, Burnette JL, Lieberman D, Ohtsubo Y, McCullough ME. Experimental evidence that apologies promote forgiveness by communicating relationship value. *Sci Rep*. 2021;11(1):13107. <https://doi.org/10.1038/s41598-021-92373-y>.
17. Frantz CM, Bennisson C. Better late than early: the influence of timing on apology effectiveness. *J Exp Soc Psychol*. 2005;41(2):201–7. <https://doi.org/10.1016/j.jesp.2004.07.007>.
18. Gold GJ, Davis JR. Psychological determinants of forgiveness: an evolutionary perspective. *Humboldt J Soc Relat*. 2005;29(2):111–34.
19. Göçmen Ö, Coşkun H. The effects of the six thinking hats and speed on creativity in brainstorming. *Think Skills Creat*. 2019;31:284–95. <https://doi.org/10.1016/j.tsc.2019.02.006>.
20. Gültepe B, Coşkun H. Music and cognitive stimulation influence idea generation. *Psychol Music*. 2016;44(1):3–14. <https://doi.org/10.1177/0305735615580356>.
21. Hayes AF. Introduction to mediation, moderation, and conditional process analysis: a regression-based approach. New York: The Guilford; 2013.
22. Hewstone M, Rubin M, Willis H. Intergroup bias. *Annu Rev Psychol*. 2002;53:575–604. <https://doi.org/10.1146/annurev.psych.53.100901.135109>.
23. Hornsey MJ. Social identity theory and self-categorization theory: a historical review. *Soc Personal Psychol Compass*. 2008;2(1):204–22. <https://doi.org/10.1111/j.1751-9004.2007.00066.x>.
24. Hornsey MJ, Wohl MJ, Philpot CR. Collective apologies and their effects on forgiveness: pessimistic evidence but constructive implications. *Aust Psychol*. 2015;50(2):106–14. <https://doi.org/10.1111/ap.12087>.
25. Klimecki OM. The role of empathy and compassion in conflict resolution. *Emot Rev*. 2019;11(4):310–25. <https://doi.org/10.1177/1754073919838609>.
26. Masuda N, Fu F. Evolutionary models of in-group favoritism. *F1000Prime Rep*. 2015;7:27. <https://doi.org/10.12703/P7-27>.
27. McCullough ME, Fincham FD, Tsang JA. Forgiveness, forbearance, and time: the temporal unfolding of transgression-related interpersonal motivations. *J Pers Soc Psychol*. 2003;84(3):540. <https://doi.org/10.1037/0022-3514.84.3.540>.
28. Ministry of Interior, Directorate General of Migration Management. Number of Syrians in Türkiye; 2024. <https://multeciler.org.tr/turkiyedeki-suriyeli-sayisi/>
29. Montoya RM, Pittinsky TL. When increased group identification leads to outgroup liking and cooperation: the role of trust. *J Soc Psychol*. 2011;151(6):784–806. <https://doi.org/10.1080/00224545.2010.538762>.
30. Mulvey KL, Gönültaş S, Herry E, Strelan P. The role of theory of mind, group membership, and apology in intergroup forgiveness among children and adolescents. *J Exp Psychol Gen*. 2022;151(3):613–27. <https://doi.org/10.1037/xge0001094>.
31. Noor M, Brown R, Gonzalez R, Manzi J, Lewis CA. On positive psychological outcomes: What helps groups with a history of conflict to forgive and reconcile with each other?. *Personality Social Psychol Bull* 2008;34(6):819–832. <https://doi.org/10.1177/01461672083155>
32. Ohbuchi K-i, Kameda M, Agarie N. Apology as aggression control: its role in mediating appraisal of and response to harm. *J Pers Soc Psychol*. 1989;56(2):219–27. <https://doi.org/10.1037/0022-3514.56.2.219>.
33. Schmitt M, Gollwitzer M, Förster N, Montada L. Effects of objective and subjective account components on forgiving. *J Soc Psychol*. 2004;144(5):465–86. <https://doi.org/10.3200/SOCP.144.5.465-486>.
34. Schumann K. The psychology of offering an apology: understanding the barriers to apologizing and how to overcome them. *Curr Dir Psychol Sci*. 2018;27(2):74–8. <https://doi.org/10.1177/0963721417741709>.
35. Schumann K, Orehek E. Avoidant and defensive: adult attachment and quality of apologies. *J Soc Pers Relat*. 2019;36(3):809–33. <https://doi.org/10.1177/0265407517746517>.
36. Skarlicki DP, Folger R. Retaliation in the workplace: the roles of distributive, procedural, and interactional justice. *J Appl Psychol*. 1997;82(3):434–43. <https://doi.org/10.1037/0021-9010.82.3.434>.
37. Stoet G. PsyToolkit - a software package for programming psychological experiments using Linux. *Behav Res Methods*. 2010;42(4):1096–104. <https://doi.org/10.3758/BRM.42.4.1096>.
38. Stoet G. PsyToolkit: a novel web-based method for running online questionnaires and reaction-time experiments. *Teach Psychol*. 2017;44(1):24–30. <https://doi.org/10.1177/0098628316677643>.
39. Tajfel H, Turner JC. An integrative theory of intergroup conflict. In: Austin WG, Worchel S, editors. *The social psychology of intergroup relations*. Monterey, CA: Brooks/Cole; 1979. p. 33–47.
40. Verkuyten M, Martinovic B. Group identity and intergroup forgiveness. In: Worthington Jr. EL, Sandage DE, Wade NG, editors. *Handbook of forgiveness* (2nd ed.). Routledge; 2019. p. 273–83. <https://doi.org/10.4324/9780429056836-24>

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