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Abstract

Victimized versus perpetrating individuals or groups are known to experience enhanced needs for *empowerment* or *acceptance*, respectively. The present research examined the emotional needs and consequent anti- and prosocial behaviors (e.g., vengefulness vs. helpfulness) of individuals or groups serving *both* as victims *and* perpetrators simultaneously (“duals”). Focusing on interpersonal transgressions, Study 1 used variations of the dictator game to induce participants with victimization, perpetration, duality, or none (control). Duals showed heightened needs for *both* empowerment *and* acceptance and equal willingness to reconcile following either empowering or accepting messages from their adversaries. However, duals’ need for empowerment overrode their need for acceptance in determining behavior. Similar to victims, and unlike perpetrators, duals showed greater antisocial (rather than prosocial) behavior. Study 2 replicated this pattern on the intergroup level, inducing Israeli Jews with victimization, perpetration, or duality using a recall task referring to the Israeli–Palestinian conflict. Theoretical and practical implications are discussed.

Keywords

duality, anti- and prosocial behaviors, needs-based model

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When people think of conflicts, they tend to intuitively perceive the roles of “victims” and “perpetrators” as dichotomous and mutually exclusive (Gray & Wegner, 2009; Noor, Shnabel, Halabi, & Nadler, 2012). However, many real-life conflicts are characterized by “dual” social roles, in the sense that adversaries serve as both victims and perpetrators. To illustrate, in a heated argument between a couple, both sides may offend and be offended by their partners. Similarly, in prolonged intergroup conflicts, both sides serve as victims in certain situations and as perpetrators in others. The present research aimed to explore the psychological experience of such “duality” by examining its influence on individuals’ and group members’ emotional needs and subsequent anti- and prosocial behaviors.

Our conceptual framework was guided by the needs-based model (Nadler & Shnabel, 2008; Shnabel & Nadler, 2008). According to the model, transgressions impair victims’ sense of *agency* (ability to determine their own and others’ outcomes). Consequently, victims experience a heightened need for empowerment, that is, they are motivated to restore their agency and strength. Perpetrators, in contrast, experience impairment to their *moral identity*. Because the sanction imposed upon those violating their community’s moral standards is their social exclusion

(Tavuchis, 1991), perpetrators are motivated to restore their positive moral identity and reassure their (re)acceptance in their community. From a broader perspective, converging evidence suggest that there are two fundamental content dimensions—“the Big Two”—which underlie self and other judgments at both individual and group levels (Abele, Cuddy, Judd, & Yzerbyt, 2008). In terms of “Big Two” theorizing, victims can be said to experience a threat to the identity dimension representing constructs such as agency, competence, influence, and power, whereas perpetrators can be conceptualized as experiencing threat to the identity dimension representing communion, sociability, and morality (SimanTov-Nachlieli, Shnabel, & Nadler, 2013).

The needs-based model’s hypotheses were empirically tested and supported in various contexts of interpersonal (Shnabel & Nadler, 2008) and intergroup (Shnabel, Nadler, Ullrich, Dovidio, & Carmi, 2009; Shnabel, Ullrich, Nadler, Dovidio, & Aydin, 2013) conflicts. These studies revealed

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that when victims received empowering messages from their perpetrators (acknowledging their rights and competence, and hence, restoring their agency), they showed greater willingness to reconcile with them than when receiving accepting messages (expressing brotherhood, liking, empathy, and understanding of the circumstances that compelled their behavior). By contrast, perpetrators showed greater willingness to reconcile after receiving accepting rather than empowering messages from their victims, because the former addressed their emotional need for acceptance and restored their moral identity.

A major limitation of the needs-based model, however, is that it has so far focused only on contexts where the roles of victims and perpetrators were perceived as distinct and clear-cut (e.g., the Holocaust, Shnabel et al., 2009). The present research was designed to extend the model's scope by investigating the effects of duality, as opposed to "pure" victimhood or perpetration, on individuals' (Study 1) and group members' (Study 2) emotional needs. Consistent with the needs-based model, we expected "duals" (simultaneously victims and perpetrators) to experience heightened needs to restore *both* agency *and* positive moral identity and show the same increase in willingness to reconcile following either empowering, or accepting messages from the other party.

Another goal of the present study was to examine whether and how duals' emotional needs for restoration of agency and positive moral identity translate into antisocial (e.g., vengeful) or prosocial (e.g., helpful) behavior toward the other party. On one hand, the experience of victimization and consequent need to restore agency might lead duals to increased antisocial behavior—preoccupied with the injustice done to them (Noor et al., 2012) victims often feel entitled to behave antisocially (Zitek, Jordan, Monin, & Leach, 2010) and their frustration may lead them to behave aggressively (Dollard, Doob, Miller, Mowrer, & Sears, 1939), such as taking revenge in an attempt to place themselves on equal footing with their perpetrators (Frijda, 1994). On the other hand, the experience of perpetration and consequent need to restore moral identity might lead duals to increased prosocial behavior: Although perpetrators sometimes attempt to deny the painful consequences of their actions and/or their responsibility for them (Bandura, 2002; Schönbach, 1990), when faced with the immorality of their acts, they may try to restore their positive identity through reconciling and compensating their victims (Estrada-Hollenbeck & Heatherton, 1998) including offering them help (Dovidio, Piliavin, Schroeder, & Penner, 2006).

Summarizing the above, the experience of victimization versus perpetration is likely to influence duals' behavior in opposite directions. Which of these opposing vectors would have stronger impact? Current research offers two possible answers. On one hand, based on evolutionary reasoning that highlights the indispensability of communion for survival (see Fiske, Cuddy, & Glick, 2007), Baumeister and Leary (1995) argued that "the need to belong is a powerful,

fundamental, and extremely pervasive motivation" (p. 497). Moreover, research on the group level (Leach, Ellemers, & Barreto, 2007) found that morality was perceived by group members as the most important dimension of their ingroup's identity, affecting their pride in and distancing from their ingroup more than competence (which is a central component of agency; SimanTov-Nachlieli et al., 2013). This research implies that duals should be more concerned with restoring moral identity and communion than with restoring agency. Consequently, duality may be predicted to translate into greater *prosocial* inclinations.

On the other hand, research in the person perception domain found that people's self-evaluations were more strongly linked to their agency than to their morality (Wojciszke, Baryla, Parzuchowski, Szymkow, & Abele, 2011), leading to the conclusion that one's "own competence influences self-evaluations and emotional responses to a higher extent than own morality" (Wojciszke, 2005; p. 181). A similar pattern was found at the intergroup level, where the perceived desirability of ingroup attributes was primarily competence—rather than morality-based (Phalet & Poppe, 1997). This research implies that duals should be more concerned with restoring agency than with moral identity, so that duality would translate into greater *antisocial* inclinations.

Without denying the centrality of individuals' and groups' need to belong and maintain positive moral identities in neutral, nonconflictual settings, consistent with the latter prediction, we theorized that in contexts of transgressions the need for agency would override the need for positive moral identity in determining anti- versus prosocial behavior. Supporting our "primacy of agency" hypothesis, correlational data obtained in the context of the Israeli–Palestinian conflict revealed that Israeli Jews' need for a "strong Israel" predicted increased antisocial tendencies toward Palestinians, whereas the corresponding need for a "moral Israel" failed to predict greater prosocial tendencies (SimanTov-Nachlieli & Shnabel, 2013). Apparently, the threat posed to ingroup agency (Israel's strength) was experienced as more acute and psychologically pressing than the threat to ingroup morality (Israel's moral identity) and consequently had greater impact on group members' behavioral tendencies toward their outgroup. Consistent with this possibility, Baumeister (1996) found that in contexts of interpersonal transgressions, the experience of victimization was generally more intense and profound psychologically than the experience of perpetration (e.g., perpetrators generally found it easier to "move on" than victims). If so, duals' need for empowerment and agency restoration may be more dominant and should exert greater impact on their behavior than their need for acceptance and moral identity restoration.

Two studies examined our hypotheses that (a) the experience of duality would lead to heightened needs for restoration of *both* agency *and* positive moral identity, yet (b) duals' heightened need for agency would lead to greater antisocial behavior whereas their heightened need for moral identity

would not translate into greater prosocial behavior. Study 1 was a lab experiment that examined victims', perpetrators' and duals' emotional needs for agency and positive moral identity, willingness to reconcile following empowering and accepting messages, and anti- and prosocial behaviors toward their adversaries compared with participants in a control condition that involved no induced transgression. Study 2 aimed to generalize the results of Study 1 to the intergroup level. Jewish Israeli participants were asked to recall transgression incidents, in which their ingroup was victimized by the outgroup (Palestinians), victimized it, or both (the "dual" condition). These two studies are complementary in terms of addressing internal and external validity concerns: Study 1 was a controlled lab experiment that induced ad-hoc interpersonal transgressions, which were identical within the experimental condition and symmetrical across conditions. Study 2 used a variety of real-life transgressions within and across conditions, yet had the advantage of using a naturalistic, psychologically meaningful group membership setting.

Study 1

To examine duality in interpersonal transgressions, Study 1 used a novel experimental paradigm based on the Dictator Game (Kahneman, Knetsch, & Thaler, 1986). The game involves one player, the *proposer*, who allocates valuable resources (e.g., material payoffs) between herself and the *recipient*. To the extent that a proposer allocates more resources to herself than to the recipient, she may be viewed as a perpetrator violating the fairness norm prescribing equal payoffs in line with the "equity principle" (Selten, 1978), whereas the recipient, who has to passively accept the unfair offer, may be viewed as a victim.

Because our goal was to induce not only perpetration and victimization, but also duality, we developed a modified version of the game in which participants acted as both proposers and recipients at the same time. Specifically, each participant was asked to divide valuable resources (i.e., extra credit points) between himself and another player, knowing that the other player was asked to do the same. Next, participants received bogus feedback about their own and the other player's allocations, which constituted the experimental manipulation assigning participants into four groups: victims, who learned that other player allocated resources unfairly; perpetrators, who learned that they allocated resources unfairly; duals, who learned that both they and the other player allocated the resources unfairly; and control participants who learned that neither side allocated the resources unfairly. They were further told that the final payoff would be determined according to their success in answering trivia questions that they and the other player would write to each other. Following the assignment to roles participants completed a questionnaire assessing their emotional needs for agency and positive moral identity. To assess their anti- and prosocial behaviors, they were given opportunities to deny or

donate credit points to the other player, representing anti- and prosocial behaviors, respectively. Finally, they were exposed to empowering and accepting messages hypothetically sent by the other player and their subsequent willingness to reconcile was assessed.

With regard to victims and perpetrators, we expected to replicate previous findings obtained within the needs-based model's framework (Shnabel & Nadler, 2008). Specifically, compared with control participants, victims were predicted to show enhanced need for agency and greater antisocial behavior. They were also expected to show greater willingness to reconcile following an empowering compared with an accepting message. Perpetrators were predicted to show enhanced need to restore positive moral identity and greater prosocial behavior compared with control participants, as well as greater willingness to reconcile following an accepting compared with empowering message. Importantly, for the purpose of the present study, we expected duals, compared with control participants, to show heightened needs to restore both agency and positive moral identity. Duals were also expected to show similar levels of willingness to reconcile following either an empowering, or an accepting message. Finally, consistent with our "primacy of agency" hypothesis, we predicted that duals' heightened need for agency would translate into greater antisocial behavior whereas their increased need for positive moral identity would not lead to greater prosocial behavior.

Method

Participants. Participants were 86 undergraduate students from Tel Aviv University who participated in exchange for credit points necessary to complete course requirements. Participants who indicated that the credit points were not valuable for them were not allowed to take part in the study. Four participants were excluded from the sample because they did not believe that another participant (i.e., the other player) existed. Thus, the final sample included 82 students (59 women, $M_{\text{age}} = 23$, $SD = 1.60$).

Procedure. Participants were told they would take part in a study on "decision making under uncertainty." They were further told that the experiment involved interaction between two players, themselves and another participant, who were connected via the laboratory's computer network. To make the online interactive experience more realistic, 4 to 10n students were invited to the laboratory at the same time and began the experiment together. Participants' identities were kept unknown and the final payoff was given to each participant confidentially at the end of the experiment. In reality, there was no other player and all instructions, procedures, and interactions were computerized.

Participants were informed that they would receive 15 credit points, yet they had the opportunity to gain up to 55 bonus points. They were then asked to divide the 55 extra

points between themselves and the other player in three stages, in which they allocated 10, 20, and 25 credit points. Next, they received bogus feedback about their allocation, which constituted the experimental manipulation.

Participants assigned as victims were told that the other player allocated the points unfairly, in a manner incompatible with the accepted social norm, whereas they allocated the points fairly, compatible with the accepted norm. Note that the phrasing of this feedback made it relevant not only to participants who allocated equally or generously but also to participants who allocated more credit points to themselves than to the other player.¹ In the latter case, this feedback implied that even though participants' allocation was unequal, it was still within the common norm and could hence, be considered acceptable and fair, whereas the other player's allocation was extremely unequal and substantially deviated from the accepted norm.²

Perpetrators were told that the other participant allocated the points fairly and in line with the accepted norm, while they allocated them unfairly, in a manner that is incompatible with the accepted norm. The experiment was programmed such that in case participants assigned to the perpetrator condition used equal or nearly equal allocation, they were informed that the norm was to allocate the points "generously." Thus, they still perceived themselves as deviating from the accepted norm and violating moral standards.³ Note that an alternative approach was to exclude from the sample those participants who allocated equally in case they were assigned to the perpetrator condition. For example, Leunissen, De Cremer, and Reinders Folmer (2012) used a variation of the Trust Game (Berg, Dickhaut, & McCabe, 1995) and excluded 26% of the participants assigned to the perpetrator role because they divided resources equally between themselves and the other participant (their assigned "victim"). We refrained from doing so to avoid the selection bias that might result from including in the perpetrator condition only those participants who use unequal allocation, rather than all the participants randomly assigned to it. The complexity involved in the induction of perpetration is further elaborated in the Discussion below.

Duals were told that both they and the other player divided points unfairly that was not in accordance with the social norm. As in the perpetrator condition, in case participants used equal allocation they were informed that the social norm was to allocate the points generously such that they would still feel that they violated moral standards. Finally, control participants were told that both they and the other player divided the points in accordance with the social norm without an indication of these allocations' fairness (because telling participants that they used fair allocations might have constituted a positive rather than neutral feedback).

A manipulation check assessed the effectiveness of role assignment. We then measured participants' self-reported emotional needs for agency (e.g., their wish to have greater influence on the final payoff) and positive moral identity

Table 1. Inducing the Social Roles of Victim, Perpetrator, Dual, and Control (Study 1).

Step 1	Allocation task: Dividing extra credit points between oneself and the other player
Step 2	Random assignments of participants to social roles through bogus feedback:
	<i>Victim:</i> The other player allocated unfairly—not in accordance with the accepted social norm. You allocated fairly—in accordance with the social norm.
	<i>Perpetrator:</i> The other player allocated fairly—in accordance with the social norm. You allocated unfairly—not in accordance with the norm.
	<i>Dual:</i> The other player allocated unfairly—not in accordance with the accepted social norm. You allocated unfairly—not in accordance with the norm.
	<i>Control:</i> The other player allocated in accordance with the accepted social norm. You allocated in accordance with the social norm.
Step 3	Manipulation checks and measures of the needs for agency and positive moral identity
Step 4	Introduction of the trivia task that will determine participants' final payoff
Step 5	Measures of anti- and prosocial behaviors
Step 6	Measure of willingness to reconcile following empowering vs. accepting messages from the other player

(e.g., their wish to be recognized as fair people). Next, participants were told that in the last phase of the experiment both players would write a trivia question to each other. They were told that their success in this task would determine the weight given to their previous allocation in the final bonus payoff such that if one player failed and the other succeeded, the payoff would be determined *solely* according to the latter's allocation. If both either answered correctly or failed, the final payoff would be calculated as the average of their previous allocations. Participants' understanding of this explanation was verified using a short quiz. The difficulty level of the trivia question participants planned to ask the other player served as an indicator of their antisocial behavior (i.e., vengefulness) because asking difficult questions practically meant blocking the other player's influence on the final payoff. To assess prosocial behavior, we gave the participants the opportunity to donate a part of their credit points to the other player. Last, participants were presented with two types of messages—empowering and accepting—hypothetically sent by the other player, and indicated which message increased their willingness to reconcile to a greater extent.

Participants were then informed that due to "computer synchronization problems" the trivia task was canceled and that the final payoff would be calculated as the average of their allocations (in practice, victims always received 30 credit points, perpetrators received 60, and duals and control participants got 45). Participants were thanked and debriefed by email. The complete procedure is outlined in Table 1.

Table 2. Means and Standard Deviations for Outcome Variables in Study 1.

Condition	Victimhood		Perpetration		Agency need		Moral need		Antisocial behavior		Prosocial behavior		Willingness to reconcile	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Victims	4.53	1.58	2.53	1.81	5.05	0.95	2.92	1.22	5.00	1.33	-0.37	0.22	6.12	1.97
Perpetrators	1.73	1.39	4.95	1.09	3.98	1.11	5.24	1.11	2.73	1.45	0.59	0.20	2.98	1.88
Duals	3.52	1.63	3.90	1.70	5.04	0.67	4.40	1.43	5.00	1.55	-0.15	0.21	4.75	1.85
Control	1.40	0.94	2.25	1.62	4.41	1.22	3.17	1.47	3.80	2.28	-0.13	0.21	4.23	2.24

Note. $N = 82$ students. Victimhood, perpetration, agency need, moral need, and antisocial behavior were measured using 7-point scales. Prosocial behavior was measured using a 0% to 100% scale—presented in the table are the standardized means. Willingness to reconcile was measured on 9-point scales, such that means higher than 5 indicate greater willingness to reconcile following an empowering compared with an accepting message, whereas means lower than 5 indicate greater willingness to reconcile following an accepting compared with an empowering message. Means that do not significantly differ from 5 indicate similar levels of willingness to reconcile following either empowering, or accepting messages.

Measures

Role assignment manipulation check. Participants indicated on a 7-point scale (1 = *not at all*, 7 = *very much*) the extent to which (a) they were transgressed by the other player, and (b) the other player viewed them as transgressors. Note that the needs-based model claims that perpetrators' major concern is that others might view their acts as immoral (increasing the risk of social exclusion) rather than their own self-perception of culpability. The manipulation check for perpetration reflected this theoretical stance: we measured participants' view of the extent to which the other player perceived their behavior as offensive rather than their personal perception of their behavior's offensiveness.

Emotional needs. Adapted from Shnabel and Nadler (2008), four 7-point (1 = *not at all*, 7 = *very much*) items assessed participants' need for agency (e.g., "I wish I would have more power later in the experiment", $\alpha = .62$). Four other items assessed participants' need for positive moral identity (e.g., "I would like to convince the other participant that I am a fair person", $\alpha = .79$).

Antisocial behavior. Participants indicated the difficulty level of the trivia question they planned to ask the other player on a 7-point item (1 = *not difficult at all*, 7 = *very difficult*).⁴

Prosocial behavior. Participants were given the opportunity to donate a part of their own final payoff, ranging from 0% to 100%, to the other player.

Willingness to reconcile. Participants were exposed to both an empowering and an accepting message hypothetically sent from the other player (i.e., they were asked to imagine that the other participant sent them these messages). Because taking (as opposed to denying) responsibility for one's acts constitutes a form of social empowerment (e.g., transgressors' acknowledgment of responsibility serves as an admission of a moral debt to

the victim, which empowers the latter; Shnabel & Nadler, 2008), in the empowering message the other player took responsibility for his allocation. Because acknowledging one's fairness (as opposed to unfairness) constitutes a form of social acceptance (Shnabel & Nadler, 2008), the accepting message conveyed that the other player viewed the participant as a fair person. Messages appeared in a counterbalanced order.

Participants indicated on three 9-point items which of the two messages (a) "Makes you think more positively about the future task with the other player," (b) "Makes you think more positively about the other player," and (c) "Contributes to improving the atmosphere between you and the other player" (1 = *absolutely the first*, 5 = *both equally*, 9 = *absolutely the second*, $\alpha = .88$).

Results

Table 2 presents the means and standard deviations for all outcome variables.

Main analysis. We tested our hypotheses using a 4 (Role [victims, perpetrators, duals, control]) multivariate analysis of variance (MANOVA). It revealed a significant overall effect of role, Pillai's Trace = 1.01, $F(18, 225) = 6.37$, $p < .001$, $\eta^2 = .34$.⁵ Between-subjects tests revealed significant effects of role on all outcome variables: participants' perceived victimhood, $F(3, 78) = 22.12$, $p < .001$, $\eta^2 = .46$; perceived perpetration, $F(3, 78) = 13.48$, $p < .001$, $\eta^2 = .34$; need for agency, $F(3, 78) = 5.60$, $p = .002$, $\eta^2 = .18$; need for positive moral identity, $F(3, 78) = 14.02$, $p > .001$, $\eta^2 = .35$; antisocial behavior, $F(3, 78) = 8.80$, $p < .001$, $\eta^2 = .25$; prosocial behavior, $F(3, 78) = 4.11$, $p = .009$, $\eta^2 = .14$; and willingness to reconcile, $F(3, 71^6) = 7.81$, $p < .001$, $\eta^2 = .25$. Planned comparisons for each outcome variable are reported below.

Manipulation check. Our assignment to the different roles was successful. As intended, victims indicated greater victimhood ($p < .001$) but not greater perpetration ($p < .57$)

Table 3. Duality on Antisocial Behavior via the Need for Agency (Study 1).

	B	SE	t	p
IV-Mediator (<i>Duality on the Need for Agency</i>)	0.62	0.31	1.98	.05
Mediator-DV (<i>Need for Agency on Antisocial Behavior</i>)	0.75	0.17	4.38	.001
IV-DV Total Effect (<i>Duality on Antisocial Behavior</i>)	1.20	0.53	2.27	.03
IV-DV Direct Effect (<i>Duality on Antisocial Behavior controlled for the Need for Agency</i>)	0.73	0.49	1.50	.14

		95% CI	
Boot indirect effect	Boot SE	LL	UL
0.47	0.26	0.03	1.07

Note. $N = 82$ students. Duality (duals vs. control conditions) was dummy coded such that dual condition = 1 whereas victims, perpetrators and control conditions = 0. The two dummy variables representing the contrasts between: victims versus control (dummy coded such that victims = 1 whereas duals, perpetrators and control = 0) and perpetrators versus control (dummy coded such that perpetrators = 1, whereas duals, victims, and control conditions = 0) were controlled for (i.e., used as covariates). Bootstrap sample size = 10,000. CI = confidence interval; LL = lower limit; UL = upper limit.

compared with control participants. Perpetrators, in contrast, indicated greater perpetration ($p < .001$) but not greater victimhood ($p > .44$). Importantly, duals indicated greater perceptions of both victimhood ($p < .001$) and perpetration ($p < .005$) compared with control participants.

Emotional needs. Consistent with previous findings, victims indicated a heightened need for agency ($p = .05$) but not for positive moral identity ($p > .54$) compared with control participants. Perpetrators, in contrast, indicated heightened need for positive moral identity ($p < .001$) but not for agency ($p > .17$) compared with control participants. Importantly, as expected, duals indicated heightened need for both agency ($p = .05$) and positive moral identity ($p < .005$) compared with control participants.

Antisocial behavior. As predicted, victims chose a higher level of difficulty for the trivia question written to the other player than control participants ($p < .05$). Perpetrators, in contrast, chose a lower difficulty level ($p < .05$). Importantly, in line with our hypothesis and similar to victims, duals chose higher level of difficulty compared with control participants ($p < .05$).

Prosocial behavior. As predicted, the percentage of credit points donated by perpetrators was significantly higher compared with control participants ($p < .05$), whereas victims ($p > .43$) and duals ($p > .94$) did not significantly differ than control participants.

Willingness to reconcile. As explained above, participants indicated their readiness to reconcile with the other player following empowering and accepting messages on 9-point bipolar scales. Responses were coded such that means higher than 5 indicated that participants were more willing to reconcile following an empowering compared with accepting message, whereas means lower than 5 indicated participants'

were more willing to reconcile following accepting compared with empowering messages.

As expected, the mean obtained for control participants did not significantly differ from 5, the scale's neutral midpoint, $t(18) = -1.50$, $p > .15$, indicating similar levels of willingness to reconcile following either empowering, or accepting messages. Moreover, in line with expectations, victims' mean was significantly higher when compared either with control participants ($p < .01$) or to the midpoint, $t(16) = 2.34$, $p < .05$, indicating greater willingness to reconcile following an empowering compared with accepting message. Conversely, perpetrators' mean was significantly lower compared with either control participants ($p = .05$) or the midpoint, $t(19) = -4.79$, $p < .001$, indicating greater willingness to reconcile following an accepting compared with an empowering message. Importantly, duals' mean did not significantly differ either from control participants ($p > .42$) or from the midpoint, $t(18) = -0.58$, $p > .56$, suggesting that, as expected, their willingness to reconcile following both message types was similar.

Mediation analysis. Using the PROCESS macro (Hayes, 2012; Model 4), we tested the following causal sequence: (a) induction of duality increased participants' need for agency and (b) this heightened need for agency, in turn, led to increased vengeance. For this purpose, role was coded into three dummy variables, with the control as reference group (Aiken & West, 1991; see Table 3 for detailed explanation about our coding). The contrast between duals and control was the independent variable, the need for agency was the mediator, antisocial behavior (i.e., vengeance) was the dependent variable, and the two dummy variables representing the contrasts between victims versus control and perpetrators versus control were controlled for (i.e., used as covariates). The results, presented in Table 3, revealed a significant indirect effect of duality on antisocial behavior through increased need for agency (0 was not included in the 95% confidence interval).

By contrast, testing for a similar mediation model, with duality as the independent variable, need for positive moral identity as the mediator, and prosocial behavior (i.e., donation) as the dependent variable revealed a nonsignificant indirect effect. In particular, although the effect of duality on the need for positive moral identity was significant ($p = .004$), the effect of the need for positive moral identity on prosocial behavior was nonsignificant ($p = .85$). The direct effect of duality on prosocial behavior was also nonsignificant ($p = .91$) and so was the indirect effect (the 95% confidence interval was between -0.21 and 0.23).

Discussion

Study 1 supported our hypotheses regarding duals' emotional needs and behaviors. Replicating and extending previous findings within the framework of the needs-based model, we found that whereas victims and perpetrators showed heightened need for either agency or positive moral identity, respectively, duals showed enhancement in both needs simultaneously. Similarly, whereas victims and perpetrators showed greater willingness to reconcile following either empowering, or accepting messages, duals showed equal willingness to reconcile following both message types. Finally, in terms of behavior, victims and perpetrators showed stronger antisocial or prosocial behaviors, respectively. As for duals, consistent with our "primacy of agency" hypothesis, the increase in their need for agency translated into greater vengeance, whereas the corresponding increase in their need for positive moral identity did not translate into greater helpfulness. Thus, despite the duality in terms of emotional needs, when anti- and prosocial tendencies were examined duals' behavior resembled that of victims.

To the best of our knowledge, this study is the first to manipulate and examine duality in a controlled lab experiment. Our interest in observing victims, perpetrators, and duals simultaneously required a relatively complex experimental procedure. Admittedly, the passive victim's role is relatively easy to induce in a laboratory, for example, by having a confederate mistreat participants (e.g., Cohen, Nisbett, Bowdle, & Schwartz, 1996) or offering disparaging criticism of their work (e.g., Baron, 1988). However, inducing perpetration is more difficult because it paradoxically requires coaxing participants into transgressing against others, yet making them do so on *their own volition* to establish blame (Shaver, 1985). Classic paradigms that successfully lead most participants to transgress against others, such as the "teacher-student" (Milgram, 1974) or the "guard-prisoner" (Haney, Banks, & Zimbardo, 1973) paradigm, are ethically questionable. Using participants' recall of relevant life situations (e.g., McCullough, Worthington, & Rachal, 1997, see also Study 2 below) has the advantage of high psychological involvement, yet it does not allow the standardization and experimental control crucial for a study testing duality for the first time.

The challenges involved in inducing perpetration in a lab setting may be partially responsible for the fact that individuals' psychological experience of perpetration was relatively understudied compared with individuals' experience of victimization (see Leunissen et al., 2012). The development of a novel experimental paradigm that effectively induces participants with victimization, perpetration, or both may thus, be considered an important methodological contribution of the current research.

In terms of theoretical contribution, extending the needs-based model to investigate duality is important because many conflicts involve some degree of duality rather than clear-cut, mutually exclusive roles of "victim" or "perpetrator." Our empirical findings support previous theorizing that one's victimhood is more profound psychologically than one's perpetration (Baumeister, 1996); even when related to the same incident, in which both parties transgressed against each other to the *same* extent, the need to restore agency exerted greater impact on behavior than the need to restore positive moral identity. This finding sheds light on the escalation of conflicts: it suggests that when two individuals transgress against each other, they are likely to respond with further aggression. Unfortunately, what one party sees as just retribution, the other typically views as unjustified aggression that needs to be avenged, leading to a vicious circle of aggression (Newberg, d'Aquili, Newberg, & deMarici, 2000). As explained in the "General Discussion," understanding duals' basic emotional needs and the way they translate into anti- or prosocial behaviors can help plan effective interventions to prevent such escalation.

Study 2

Study 2 examined the effects of duality at intergroup level by exploring the emotional needs and anti- or prosocial behavioral tendencies of ingroup members involved in a prolonged violent conflict, in which they serve as victims in some situations and perpetrators in others. Previous work within the framework of the needs-based model revealed that the pattern of enhancements in victims' and perpetrators' emotional needs was parallel in both the interpersonal (Shnabel & Nadler, 2008) and the intergroup (Shnabel et al., 2009, Siem, von Oettingen, Mummendey, & Nadler, 2013) levels. We therefore hypothesized that similarly to individual "duals," members of "dual" groups would show increased needs for both restoration of agency and moral identity. Moreover, research on the interindividual-intergroup discontinuity effect (Insko, Kirchner, Pinter, Efav, & Wildschut, 2005) found that people revealed greater antisocial tendencies (e.g., they were more competitive and less trustworthy) when acting as group members than as individuals. This finding bolstered our confidence that in line with the "primacy of agency" hypothesis, duality would translate into stronger antisocial than prosocial behavior also at intergroup level.

Whereas Study 1 created ad hoc transgressions in a controlled laboratory setting, Study 2 used the real-life context of the Israeli–Palestinian conflict, in which both parties repeatedly transgress against each other. Our participants were Israeli Jews and the experimental induction of victimization, perpetration, and duality was based on a technique developed by Mazziotta, Feuchte, Gausel, and Nadler (2013) in their study on the emotional needs of conflicting group members in Liberia. Specifically, participants in Mazziotta et al.'s study were instructed to recall and write about a specific incident in which their ingroup either victimized or was victimized by another ethnic group. Although conflict-related attitudes (regarding which group constitutes the “real” victim) of members of groups involved in a prolonged conflict are typically deeply rooted and rigid (Bar-Tal & Halperin, 2011), Mazziotta et al. successfully induced in their participants a sense of *either* victimization *or* perpetration. Apparently, the writing task vividly evoked the emotions associated with the incidents.

Applying their technique to the context and purposes of the present study, participants in the victim condition were instructed to recall and write about two incidents in which Israeli Jews had been victimized by Palestinians. To illustrate, many participants wrote about the Passover massacre of 2002, in which 30 unarmed Israeli civilians were killed and 140 injured in a Hamas suicide bombing attack during a traditional Seder (Jewish ritual feast) held at Park Hotel in Netanya. Participants in the perpetrator condition were instructed to recall and write about two incidents in which their ingroup victimized Palestinians. To illustrate, many wrote about the 1994 Cave of the Patriarchs massacre (aka Goldstein massacre) in which 29 unarmed Palestinian civilians were killed and 125 injured when an Israeli settler opened fire during a Muslim prayer inside the Ibrahim Mosque in Hebron. Finally, participants in the dual condition were instructed to recall and write about one victimization incident and one perpetration incident.

Following a manipulation check that assessed the effectiveness of the assignment to the different roles, we measured participants' emotional needs for agency and positive moral identity and their anti- and prosocial tendencies toward Palestinians. In line with Study 1, we expected participants who recalled victimization incidents to show heightened need for agency as well as greater vengefulness against Palestinians. By contrast, participants who recalled perpetration incidents were predicted to show increased need for positive moral identity as well as greater helpfulness toward Palestinians. Most importantly, we expected participants in the dual condition to show heightened needs for *both* agency and positive moral identity. Yet, consistent with the “primacy of agency” hypothesis, we also expected duals' heightened need for agency to exert greater impact on their behavioral tendencies than their increased need for positive moral identity. Thus, we expected duals to show greater vengefulness against Palestinians but not greater helpfulness toward them.

Method

Participants. Participants were 94 Israeli Jews recruited by a commercial research firm for an online survey on the Israeli–Palestinian conflict in exchange for 20 NIS (~\$5). Twelve participants assigned to the perpetrator or dual conditions refused to write about an incident in which their ingroup was the perpetrator and were excluded from the sample. Three additional participants were excluded because they failed the “instructional manipulation check” (Oppenheimer, Meyvis, & Davidenko, 2009), which tests whether online respondents read the experimental instructions.⁷ The final sample included 79 participants (41 women, $M_{\text{age}} = 38.57$, $SD = 13.31$).

Procedure. Participants were told that the study investigated the historical relationship between Israelis and Palestinians. As brief background information, participants in the three experimental conditions first read that

the Israeli–Palestinian conflict has endured over 100 years and has led to a substantial number of casualties among both sides. Many experts agree that during the conflict there were many incidents in which innocent Israeli civilians were badly injured by Palestinians, as well as many incidents in which innocent Palestinian civilians were badly injured by Israelis.

The purpose of this short passage was to neutralize potential resistance among participants assigned to the perpetrator condition by reminding that their ingroup's suffering has not been dis-acknowledged or forgotten, but is simply not the focus of the present study.

Next, participants were randomly assigned to one of the three experimentally induced roles (victims, perpetrators, and duals). Based on Mazziotta et al. (2013), victims were instructed as follows: “Now, please take some time to think about two incidents in which Israelis were severely harmed by Palestinians. For each incident, please write down in a few sentences when and where it took place and what harm was caused.” Perpetrators were instructed to recall two incidents in which Israelis severely harmed Palestinians. Duals were asked to recall one incident in which Israelis were harmed by Palestinians and one in which Israelis harmed Palestinians.

Because the Israeli–Palestinian conflict can be defined as intractable, namely, it is violent, protracted, perceived as irresolvable, total, and central (Bar-Tal, 1998; Kriesberg, 1993), asking participants to recall neutral incidents was clearly tricky—cooperation between Israelis and Palestinians (e.g., a friendly football match) constitutes a positive rather than a neutral episode, and a period of quiet cannot be counted as “an incident”. A control condition that involved no writing at all would have also been problematic: Because the Israeli–Palestinian conflict constitutes a core element in Israeli Jews' identity (Kelman, 2008), participants who do not arrive at the experiment as a “tabula rasa” are likely to

project their preconceptions regarding their ingroup's role in the conflict when assigned to the control condition. Thus, in the absence of a manipulation that assigns participants to a specific role, right-wing participants may respond from the viewpoint of victims, whereas left-wing participants may respond from the viewpoint of perpetrators. This "noise" might interfere with the ability of such a condition to serve as a valid control.

We overcame this obstacle by using bipolar scales for all dependent variables with neutral levels represented by their midpoints (cf. Leach, Iyer, & Pedersen, 2006, for a similar approach). In particular, these midpoints represented *no change* in participants' emotional needs and behavioral tendencies, and thus, corresponded to a control condition; scores lower or higher than the midpoint represented *decreases* or *increases* in needs and behavioral tendencies, respectively. Thus, victims' and duals', but not perpetrators' scores on need for agency and vengefulness were expected to be significantly above the neutral midpoint. Conversely, perpetrators' and duals', but not victims' scores on need for positive moral identity were expected to be significantly above the neutral midpoint. Finally, only perpetrators' scores on helpfulness were expected to be significantly above the neutral midpoint.

On completion, participants indicated their ingroup identification and provided demographic information (age, gender, and political orientation). They were then thanked and debriefed.

Measures

Manipulation check. Participants were asked to indicate which of seven pie charts best represented their ingroup's role in the recalled incidents. The first pie chart represented 100% victimhood and 0% perpetration, whereas the seventh represented 0% victimhood and 100% perpetration. In-between were five pie charts representing varying proportions of victimhood and perpetration, with the fourth (middle) pie chart representing equal proportions.

Emotional needs. Participants indicated on four 9-point bipolar scales the extent to which the events they recalled affected (i.e., increased, decreased, or did not change) their need for agency (e.g., "I would like Israel to demonstrate more power," $\alpha = .65$). Four additional items measured participants' need to restore moral identity following their recall of episodes (e.g., "I would like Israel to act more morally," $\alpha = .77$). The order of the two measures was counterbalanced.

Antisocial behavioral tendencies. Adapted from SimanTov-Nachlieli and Shnabel (2013), three 9-point bipolar scales measured the extent to which the recalled events increased, decreased, or did not change participants' vengefulness against Palestinians (e.g., "I would like Israel to use unrestricted force in response to any act of terrorism", $\alpha = .78$).

Prosocial behavioral tendencies. Adapted from SimanTov-Nachlieli and Shnabel (2013), three 9-point bipolar scales measured the extent to which the recalled events increased, decreased or did not change participants' helpfulness toward Palestinians (e.g., "I would like Israel to provide humanitarian aid to Gaza", $\alpha = .93$).

The order of the two measures of behavioral tendencies was counterbalanced.

Results

Table 4 presents the means and standard deviations for all outcome variables.

Main analysis. A MANOVA (Role [victims, perpetrators, duals]) revealed a significant overall effect of role, Pillai's Trace = 0.48, $F(10, 146) = 4.59, p < .001, \eta^2 = .24$.⁸ Between-subjects tests revealed significant effects of role on all outcome variables: participants' perceptions of the ingroup's role in the recalled episodes, $F(2, 76) = 20.74, p < .001, \eta^2 = .35$; need for agency, $F(2, 76) = 19.82, p < .001, \eta^2 = .34$; need for positive moral identity, $F(2, 76) = 8.83, p < .001, \eta^2 = .19$; antisocial behavioral tendencies; $F(2, 76) = 3.35, p < .05, \eta^2 = .08$; and prosocial behavioral tendencies, $F(2, 76) = 7.84, p < .005, \eta^2 = .17$. Planned comparisons for each outcome variable are reported below.

Manipulation check. As expected, perpetrators expressed a greater sense of perpetration than victims ($p < .001$). Moreover, as intended, duals expressed greater perpetration than victims ($p < .005$), yet greater victimization than perpetrators ($p < .005$). Put differently, in terms of relative victimization and perpetration, duals perceived their ingroup's position to be in the middle, between victims and perpetrators, indicating successful assignment to three distinct roles.

Emotional needs. Consistent with previous findings, victims' need for agency was significantly higher than five (the scale's midpoint), $t(30) = 10.89, p < .001$, indicating an increased need of Israeli Jews for agency following the recall of episodes in which their ingroup was victimized. Perpetrators' need for agency did not significantly differ from the midpoint, $t(21) = 0.64, p > .52$, indicating no change in Israeli Jews' need for agency following the recall of episodes in which their ingroup transgressed against Palestinians. Importantly, for the purposes of the present research, and consistent with Study 1, duals were significantly above the scale's midpoint, $t(25) = 6.37, p < .001$, indicating an increased need for agency. Additional between-groups comparisons confirmed that as expected, both victims and duals had significantly higher need for agency compared with perpetrators ($ps < .001$).

As for the need for positive moral identity, consistent with previous findings it increased among perpetrators, who were significantly above the scale's midpoint, $t(21) = 5.06, p < .001$.

Table 4. Means and Standard Deviations (Study 2).

Condition	Ingroup's role		Agency need		Moral need		Antisocial tendencies		Prosocial tendencies	
	M	SD	M	SD	M	SD	M	SD	M	SD
Victims	2.03	1.38	7.15	1.10	4.84	1.60	6.42	1.83	3.81	2.49
Perpetrators	4.64	1.73	5.16	1.16	6.61	1.49	5.04	1.99	6.30	1.97
Duals	3.19	1.27	6.46	1.17	5.92	1.54	6.06	1.98	5.01	2.21

Note. $N = 79$ Israeli Jewish participants. Ingroup's Role was measured on a 7-point scale, such that lower means indicate greater victimhood and higher means indicate greater perpetration.

.001, but not among victims, who did not differ from the midpoint, $t(30) = -0.56$, $p > .57$. Most importantly, duals were significantly above the midpoint, $t(25) = 3.05$, $p < .005$, indicating an increased need for positive moral identity. Additional between-groups comparisons confirmed that as expected, both perpetrators and duals had significantly higher need for positive moral identity compared with victims ($ps < .01$).

Antisocial behavioral tendencies. As expected, vengefulness was higher than the midpoint for victims, $t(30) = 4.31$, $p < .001$, but not for perpetrators, $t(21) = 0.11$, $p > .91$. Importantly, in line with Study 1, duals' vengefulness was significantly higher than the midpoint, $t(25) = 2.67$, $p < .05$, indicating an increase in vengefulness. Additional between-groups comparisons confirmed that as expected, levels of vengefulness among victims and duals were significantly ($p < .01$) and marginally ($p = .08$) higher compared with perpetrators.

Prosocial behavioral tendencies. As predicted, helpfulness was higher than the midpoint for perpetrators, $t(21) = 3.09$, $p < .01$, indicating greater helpfulness, but not for victims, whose helpfulness was even below the midpoint, $t(30) = -2.66$, $p < .05$. Importantly, and consistent with Study 1, duals' helpfulness did not differ from the midpoint, $t(25) = 0.03$, $p > .97$, indicating no change in their helpfulness level. Additional between-groups comparisons confirmed that as expected, perpetrators showed higher helpfulness than both victims ($p < .001$) and duals ($p = .05$).

Discussion

Extending the findings of Study 1 to the real-life context of a prolonged intergroup conflict, Study 2 found that when Israeli Jews recalled episodes in which their ingroup was victimized by Palestinians, they experienced a heightened need for agency and showed greater antisocial behavioral tendencies against Palestinians. In contrast, when they recalled episodes in which their ingroup victimized Palestinians, they experienced a heightened need to restore positive moral identity and showed greater prosocial behavioral tendencies toward Palestinians. Finally, in line with our theorizing about

the effects of duality, when Israeli Jews recalled an episode in which their ingroup victimized and an episode in which it was victimized by Palestinians, they experienced enhanced need to restore both agency and positive moral identity. Yet, consistent with our prediction duals showed heightened antisocial, vengeful tendencies but no change in prosocial, helpful tendencies. Note that because Study 2 did not include a control group we could not test for an indirect effect similar to the mediation analysis conducted in Study 1 (where the independent variable was the contrast between the dual and control conditions). Nevertheless, the pattern of results is consistent with our "primacy of agency" hypothesis according to which duals' need for agency overrode their need for positive moral identity in determining behavior. Thus, whereas the increase in duals' need for agency seemed to translate into greater antisocial tendencies, the increase in their need for positive moral identity seemed to fail to translate into greater prosocial tendencies.

Our finding that duals' behavior is similar to that of victims may be viewed as consistent with previous research suggesting that in prolonged intergroup conflicts characterized by mutual violence both sides develop a deep sense of victimhood but not of perpetration (e.g., Noor, Brown, Gonzalez, Manzi & Lewis, 2008). Apparently, the threat posed to the ingroup's agency, which is perceived by group members as putting the ingroup's very existence at risk (Bartal, 2007), might be experienced as more crucial and urgent, and thus, exerts greater impact on group members' behavioral tendencies than the threat posed to their ingroup's moral identity. This possibility is consistent with classical models of core psychological needs (Maslow, 1943; Murphy, 1958) according to which the need for security and safety is most fundamental. As such, this basic need, which reflects the ingroup's agency in the sense of ability to defend its members (SimanTov-Nachlieli et al., 2013) plays a more critical role in determining behavior than higher order needs, including the need for morality.

However, one issue requires further clarification: even if the need for agency indeed prevails over the need for positive moral identity, addressing the latter is clearly also highly important for groups (Leach et al., 2007). Whereas our study implies that "pure" perpetrators may cope with the threat posed to their moral identity through increased prosocial

behavior, the question remains as to how duals cope with this threat. A possible answer is provided by Wohl, Branscombe, and Klar (2006) who, in their discussion of intergroup contexts characterized by ongoing mutual hostilities (“dual contexts” in our terminology), argue that group members engage in a variety of strategies that allow them to legitimize their group’s harmful actions (see also Bandura, 2002). For example, group members often blame the outgroup for bringing its suffering upon itself by depicting the ingroup’s transgressions as a justified reaction to its prior transgressions (Wohl et al., 2006) or as an act of self-defense (Noor et al., 2012). Of course, duals’ inclination to cope with the threat to their moral identity by denying their culpability while maintaining their antisocial behavior is likely to fuel the continued cycle of escalating violence. Thus, as discussed below, understanding the psychological dynamics that characterizes duals is critical for identifying strategies aimed at breaking this vicious circle.

General Discussion

Two studies examined the role of duality in contexts of both interpersonal and intergroup transgressions. In line with the general logic of the needs-based model, we found that the experience of duality led to enhanced needs for restoration of both agency and positive moral identity. Yet, while the need for agency translated into greater antisocial behavior against the other party to the conflict, the need to restore moral identity did not translate into greater prosocial behavior. These findings may explain how vicious cycles of mutual transgressions and violence are created, maintained and—in light of the evidence that revenge is almost always excessive (Newberg et al., 2000)—escalate.

From a theoretical perspective, despite the contribution of the needs-based model to understanding the dynamics between victims and perpetrators, its scope has hitherto remained limited to conflicts characterized by distinct, clear-cut roles of victims and perpetrators (e.g., Jews and Germans; Shnabel et al., 2009). However, such conflicts are relatively rare because even in contexts where one of side has been commonly acknowledged as the perpetrator and the other as the victim, the parties involved often perceive these roles as more complex (e.g., Noor et al., 2012). For example, even though Hutus are commonly viewed as the perpetrators in the Rwandan conflict because they committed the 1994 genocide of the Tutsis, Hutus themselves often view their ingroup as a victim of Tutsi oppression that had precipitated the genocide (Staub, 2003). By examining duality within the framework of the needs-based model our research extended it and made its insights relevant and applicable to a much wider scope of conflicts.

Understanding that duals are motivated to restore both their agency and moral identity can help develop more effective interventions aimed at healing relations between adversarial individuals and groups. Existing interventions have

traditionally highlighted the importance of mutual acceptance and empathy, which are typically related to the need to restore communion and moral identity (SimanTov-Nachlieli et al., 2013). For example, interventions intended to foster empathy have been proposed as a means to increase mutual forgiveness and promote reconciliation between couples (e.g., McCullough, 1997; Worthington, 1998). Similarly, the “To Reflect and Trust” intergroup dialogue intervention (TRT; Maoz & Bar-On, 2002) aims to “work through” the conflict by developing conflicting group members’ ability to accept the “other” and empathize with the other’s pain. The present research, however, suggests that such interventions might leave the conflicting parties’ urgent need for agency unaddressed, and hence, fail to prevent them from repeatedly transgressing against each other.

More optimistically, however, our findings imply that one strategy to stop this downward spiral may be to address duals’ pressing need for agency, which should allow their need to restore moral identity to come to forefront and lead to stronger prosocial behavior (similar to the behavior found among perpetrators). Consistent with this suggestion, SimanTov-Nachlieli and Shnabel (2013) found that an intervention that addressed Israeli Jews’ and Palestinians’ need for agency through an affirmation of their ingroup’s strength and resiliency increased their attentiveness to moral considerations, leading to greater prosocial tendencies toward each other.

Future research should also examine strategies that address duals’ two basic needs simultaneously. For example, because the victim role is associated with superior morality, inducing conflicting parties with a common victim identity was found to restore their positive moral identity and lead to greater empathy and forgiveness (Shnabel, Halabi, & Noor, 2013; see also Vollhardt, 2009). Correspondingly, because the perpetrator role is associated with greater power and influence, inducing conflicting parties with a common perpetrator identity was found to restore their sense of agency leading in turn to greater forgiveness (Shnabel, Halabi, & Noor, 2013). It is possible that inducing “dual” conflict parties with both a common victim identity and a common perpetrator identity simultaneously would address both needs, leading in turn to more constructive behaviors that may set an upward spiral into motion.

Finally, future research may also explore the generalizability of our findings to other conflictual contexts. In particular, it is possible that in intimate relations in which the partners are particularly committed to the relationship due to their substantial investment in it (Rusbult, 1980) duals may inhibit their initial impulse to react destructively in response to transgressions by their partners and react instead in a constructive, prosocial manner (Rusbult, Verette, Whitney, Sglovik, & Lipkus, 1991). Nevertheless, given the fact that our finding were replicated in two very different contexts (in terms of transgression severity, broadness of conflictual context, etc.) it is reasonable to assume that *in general* (i.e.,

unless there are especially strong inhibitions against antisocial behavior) duality would lead to stronger, aggressive, vengeful inclinations. Examining and finding ways to replace these destructive inclinations with a virtuous cycle of goodwill should be the next challenge for researchers as well as community and national leaders.

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Notes

- Overall, the great majority of participants (55, or 67% of our sample) allocated more credit points to themselves than to the other player. Sixteen participants (19.5%) allocated the points equally, and 10 (12%) allocated just a bit more to the other player (i.e., 28 points to the other player and 27 to themselves). Only 1 participant allocated the credit points generously (44 out of 55 to the other player).
- A potential problem could be is that in case that participants' allocation was extremely unequal the feedback would be unreliable. To avoid this problem, we programmed the experiment such that participants who allocated more than 45 out of the 55 points to themselves were automatically directed to receive perpetrator feedback, even though they were originally assigned to be victims. However, none of the participants assigned to the victim role allocated so unequally, making this potential interference with randomization unnecessary.
- We programmed the experiment such that participants who allocated more than 45 out of 55 points to the other participant were automatically directed to receive victim feedback, even if they were originally assigned to be perpetrators or duals. However, no participant allocated so generously, hence, randomization was not interfered with.
- Note that we did not rank the actual difficulty level of the questions written by our participants because such ranking is highly subjective (i.e., it depends on the rater's scope of general knowledge). Instead, we measured participants' wish to ask difficult questions, which reflects the dependent variable in which we were interested, that is, participants' willingness to harm the other player.
- The effect of role persisted even when adding gender as a covariate in the model. Moreover, there was no effect for gender on our dependent variables.
- Seven participants failed to fill out this measure due to a technical problem, resulting in lower number of degrees of freedom.
- All reported effects persisted even when including these 15 participants in the sample.
- The effect of role persisted even when adding political orientation, ingroup identification, and gender as covariates in the model. Moreover, there was no effect for gender on our dependent variables.

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