Selfish third parties act as peacemakers by transforming conflicts and promoting cooperation

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The tremendous costs of conflict have made humans resourceful not only at warfare but also at peacemaking. Although third parties have acted as peacemakers since the dawn of history, little is known about voluntary, informal third-party intervention in conflict. Here we introduce the Peacemaker Game, a novel experimental paradigm, to model and study the interdependence between disputants and third parties in conflict. In the game, two disputants choose whether to cooperate or compete and a third party chooses whether or not to intervene in the conflict. Intervention introduces side payments that transform the game disputants are playing; it also introduces risk for the third party by making it vulnerable to disputants' choices. Six experiments revealed three robust effects: (*i*) The mere possibility of third-party intervention significantly increases cooperation in interpersonal and intergroup conflicts; (*ii*) reducing the risk to third parties dramatically increases intervention rates, to everyone's benefit; and (*iii*) disputants' cooperation rates are consistently higher than third parties' intervention rates. These findings explain why, how, and when self-interested third parties facilitate peaceful conflict resolution.

conflict | dispute resolution | war and peace | incentives | social dilemma

> "The greatest honor history can bestow is the title of peacemaker."
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> *Richard Nixon, First Inaugural Address, 1969*
>
> "Unless we in America work to preserve the peace, there will be no peace."
>
> *Richard Nixon, Second Inaugural Address, 1973*

Interpersonal and intergroup conflicts are pervasive, destructive, and persistent. The tremendous costs of conflict—the human lives lost, the suffering endured, and the resources wasted on conflict—have made humans resourceful not only at warfare, but also at peacemaking (1–5). Although the simplest context for conflict is two parties who manage their disagreement privately, disconnected from other individuals and groups, the more common context for conflict is two parties who manage their disagreement publicly, surrounded by numerous third parties (6). In the typical conflict situation, third parties not only know about the conflict; they can also choose whether or not to intervene in it.

Third parties have played a pivotal role in peacemaking since the dawn of history. Third-party intervention in conflict dates back over 5 My to ancestral Pan, the shared antecedent of humans, chimpanzees, and bonobos (7). Modern peacemakers share a number of characteristics with ancestral conflict managers; most importantly, they are often higher-ranking group members capable of using incentives, or threats and promises of incentives, to motivate peaceful conflict resolution. By introducing side payments in the form of punishments for competition and rewards for cooperation, third parties change the payoffs associated with competitive and cooperative behavior and, consequently, disputants' actions and outcomes (8). Thus, third-party peacemakers are literally game changers.

Although third parties often encounter opportunities to act as peacemakers in social, organizational, legal, political, and international conflicts, little is known about how third parties influence disputants' behavior or when and why third parties intervene to manage conflicts and bring about peace. The ubiquity and importance of situations amenable to peacemaking by third parties merit scientific investigation. The current research investigates the calculus of peacemaking by disputants and third parties.

Scientific portraits of conflict often focus on the isolated dyad, disregarding the broader social context in which the conflict is embedded (9–11). Such models are ill-equipped to consider the critical role that third parties play in shaping the process and outcomes of conflict. Scientific investigations that broaden the focus to consider also the role of third parties in conflict usually focus on the actions of formal role holders such as mediators or arbitrators (12–14). Mediators are invited by the disputants to manage the process of conflict; arbitrators' formal role requires that they determine the conflict's outcome. Neither mediators nor arbitrators choose whether, when, or how to intervene in conflict.

Independently of the conflict literature, research on altruistic norm enforcement documented third parties' willingness to administer costly punishments and rewards to restore fairness and justice in social interactions (15–18). This literature thus focuses on third parties who never benefit materially from their intervention and influence other parties unilaterally without being influenced by the parties' choices. We propose that informal, voluntary third-party intervention in conflict often occurs precisely because third parties expect to benefit from their intervention. When an employee intervenes in a conflict between two colleagues at work or a nation intervenes in a conflict between two other nations, they typically do so because they believe intervening serves their interests better than not intervening. In addition, we conjecture that a full understanding of third-party

Significance

Six experiments show that the mere possibility of third-party intervention increases cooperation in interpersonal and intergroup interactions, that third parties often fail to increase collective gains by withholding intervention, and that reducing the risk associated with intervention significantly increases peacemaking by self-interested third parties. These findings highlight the interdependence between disputants and third parties, thereby complementing existing models that solely focus on unidirectional influence of third parties on disputants. These findings underscore the role self-interest plays in shaping third parties' intervention decisions and demonstrate that selfish third parties can promote peaceful conflict resolution by literally changing the game disputants are playing. Overall, we explain why, how, and when self-interested third parties intervene in others' conflicts, to everyone's benefit.

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intervention in conflict requires considering the interdependence between third parties and disputants in conflict (19). Rather than assuming that third-party intervention is invariably costly (i.e., altruistic), we propose that intervening in conflict by investing resources such as time, effort, and money is risky: Third-party intervention in conflict may generate gains if the intervention succeeds or losses if the intervention fails. Furthermore, we propose that third parties' ability to secure gains and avoid losses for themselves plays a critical role in shaping their intervention behavior.

The Peacemaker Game

The current research addresses theoretically intriguing and practically important questions about the role of third parties in peacemaking that go beyond existing research on mediation, arbitration, and altruistic norm enforcement by third parties. Specifically, we investigate how the possibility of third-party intervention in conflict influences disputants' behavior, as well as when and why third parties voluntarily choose to intervene in other parties' conflicts. To address these fundamental open questions, we created a novel experimental paradigm, the Peacemaker Game, specifically designed to model and study the interdependence between disputants and third parties in conflict (Fig. 1).

The Peacemaker Game involves three decision makers: two disputants and a third party. The disputants choose to cooperate or compete; the third party chooses whether to intervene in the conflict or not. In all of the experiments reported in this paper, all three decision makers made their choices simultaneously and anonymously, without communicating with each other. Fig. 1 depicts the payoff structure of the Peacemaker Game. As Fig. 1 shows, a third party's decision to intervene (i.e., introduce side payments for the disputants) transforms the conflict from a highly competitive situation to a highly cooperative situation. Put differently, third parties can transform competition into cooperation by aligning the interests of disputants. In Fig. 1*A*, rewarding cooperation with +1 point and punishing competition by −1 point transform the conflict from a game of Chicken, a dangerous exercise in brinkmanship, to a game of Harmony, characterized by perfect alignment of interests between the disputants (*Materials and Methods*). In Fig. 1*B*, the same transformation rule changes the conflict from a competitive game of Prisoner's Dilemma to a highly cooperative Maximizing Difference game (*Materials and Methods*). Evidence suggests that many disputants often perceive these games to capture the underlying structure of interpersonal and intergroup conflicts (20, 21).

A third party's choice to intervene is risky in the Peacemaker Game. Not getting involved in a conflict results in a fixed small payoff to the third party, whereas choosing to intervene makes the third party vulnerable to the choices of the disputants. If the disputants maintain course toward a head-on collision, the third party's decision to intervene results in a loss of the resources invested in intervening. However, if the disputants behave cooperatively, the benefits of peaceful coexistence shared by the disputants produce gains also for the third party, who receives a positive return for his or her investment. As the gain-or-loss column in Fig. 1*C* shows, if one of the disputants cooperates while the other competes, the third party is neither worse off nor better off than if he or she had chosen not to intervene at all. In sum, the Peacemaker Game models a situation in which a third party can use incentives to make peaceful coexistence, which is desirable from their perspective, also in the best interest of the disputants. By fighting incentives with incentives, the third party's choice to intervene is literally a game changer.

We conducted six experiments to address our research questions. Experiments 1–3 tested the hypotheses that the mere possibility of third-party intervention, as well as increasing the probability of third-party intervention, will increase cooperation among disputants in interpersonal and intergroup conflicts. Experiments 4–6 tested the hypothesis that incentives play a critical role in shaping third parties' intervention behavior.

A Chicken to Harmony

	C	D
C	3, 3	2, 4
D	4, 2	1, 1

+1 for cooperation → -1 for defection

	C	D
C	4, 4	3, 3
D	3, 3	0, 0

B Prisoner's Dilemma to Maximizing Difference

	C	D
C	3, 3	1, 4
D	4, 1	2, 2

+1 for cooperation → -1 for defection

	C	D
C	4, 4	2, 3
D	3, 2	1, 1

C The payoff to 3rd-parties

	Gain-or-Loss		Fixed Payoff		Loss Only		Gain only	
3rd-party choice / Disputants' Choices	Not intervene	Intervene	Not intervene	Intervene	Not intervene	Intervene	Not intervene	Intervene
Mutual cooperation	2	4	2	2	2	2	2	4
Unilateral cooperation / defection	2	2	2	2	2	2	2	2
Mutual defection	2	0	2	2	2	0	2	2

Fig. 1. (*A*–*C*) Payoffs to disputants and third parties in the Peacemaker Game. (*A*) Payoffs to disputants in the version of the Peacemaker Game used in Experiments 1, 2, and 4. (*B*) Payoffs to disputants in the version of the Peacemaker Game used in Experiment 2. (*C*) Payoffs to third parties in the in the Peacemaker Game. In each payoff table, C denotes cooperation and D denotes defection. Numbers represent monetary payoffs (in US dollars) employed in our experiments. In *A* and *B*, in each cell the number on the left represents payment to the row player (blue) and the number on the right represents payment to the column player (red).

Experiment 1

In Experiment 1, 172 Stanford University students were randomly assigned the roles of disputants and third parties. Disputants' payoffs were based on Fig. 1*A*; third parties' payoffs were based on the gain-or-loss column in Fig. 1*C*. Participants were randomly assigned to one of two conditions. In the observer condition, third parties could not intervene in the conflict. In the peacemaker condition, third parties could choose whether or not to intervene in the conflict.

The mere possibility of third-party intervention in the conflict significantly increased disputants' cooperation rates from 72.4% to 92.9% [χ^2 test: $\chi^2(1) = 8.23$, $P = 0.004$] (Fig. 2). A majority of the third parties (66.7%) chose to intervene. However, this proportion was not significantly different from the chance rate [50%, χ^2 test: $\chi^2(1) = 3.33$, $P = 0.067$], and it was significantly below disputants' cooperation rates [χ^2 test: $\chi^2(1) = 9.83$, $P = 0.002$]. These findings provide initial evidence that the mere possibility of third-party intervention in conflict increases interpersonal cooperation. The significant difference between disputants' cooperation rates and third parties' intervention rates means that a considerable proportion of third parties (26.2%) missed opportunities to increase both their own and collective gains.

Experiment 2

Experiment 2 replicated experiment 1's findings in the context of an intergroup conflict. Participants were 237 Stanford University students randomly assigned to act as disputants or third parties. The payoff parameters were identical to experiment 1's. Participants learned that each of the three roles in the game (i.e., two disputants and one third party) will be played by a three-person group and that a majority rule will be used to determine their group strategy. Participants made 10 consecutive decisions in the game without receiving feedback between decisions. This method provided us with continuous measures of cooperation and intervention decisions.

Replicating experiment 1's findings and extending them to the context of intergroup conflict, the mere possibility of third-party

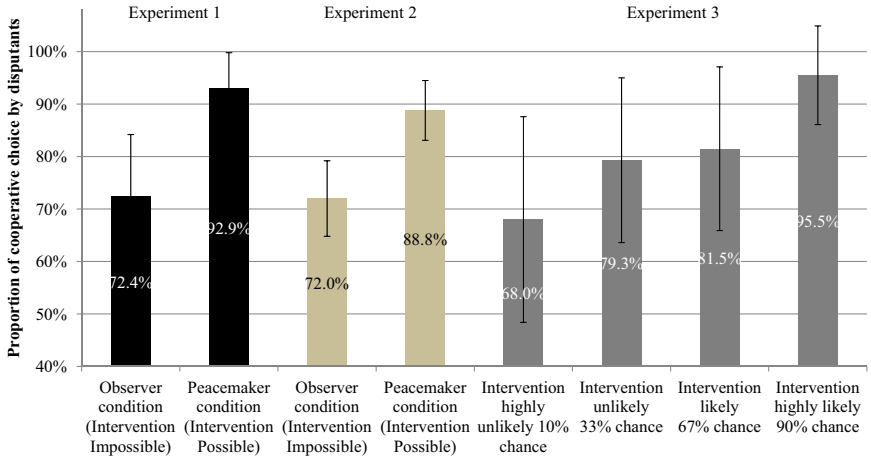

Fig. 2. Proportion of cooperative choices by disputants as a function of the possibility and probability of third-party intervention (experiments 1–3).

intervention in the conflict significantly increased disputants' cooperation rates from 72% to 88.8% [independent samples t test: $t(148.36) = -3.69$, $P = 0.0003$] (Fig. 2). Similar to experiment 1, although third parties intervened most of the time (62.6%), this proportion was not significantly different from the chance rate [50%, one-sample t test: $t(37) = 1.89$, $P = 0.066$], and it was significantly below disputants' cooperation rates [independent samples t test: $t(50.59) = -3.62$, $P = 0.001$]. Thus, once again, third parties missed opportunities to improve collective outcomes.

Experiment 3

Experiment 3 extended our research by investigating how the probability of third-party intervention influences disputants' behavior and by using the payoff parameters depicted in Fig. 1*B*. We recruited 103 Stanford University students to participate in the intergroup version of the Peacemaker Game. All of the participants were assigned the role of disputants. They were randomly assigned to one of four conditions, in which they learned that the software will intervene in the conflict on behalf of the third party 10%, 33%, 67%, or 90% of the time.

Increasing the likelihood of third-party intervention significantly increased cooperation among disputants, from 68% to 79.3%, 81.5%, and 95.5%, respectively (linear regression: $B = 0.02$, SE = 0.009, $P = 0.03$) (Fig. 2). Experiment 3 also documented, once again, the tendency of disputants to cooperate at rates much higher than the observed intervention rates. Experiments 1–3 found that the possibility of third-party intervention increases cooperation among disputants and that cooperation rates increase the more likely third-party intervention becomes. Next, we shifted our attention to the factors that influence the likelihood of third-party intervention in conflict. Specifically, we focused on the role that self-interest plays in shaping third-party intervention decisions.

Experiment 4

In experiment 4, we recruited and randomly assigned 506 adult participants to the roles of disputants or third parties in an interpersonal conflict. Disputants' payoffs were taken from Fig. 1*A*. We systematically varied the possible consequences of intervention for the third parties as shown in Fig. 1*C*. Specifically, participants were randomly assigned to one of four conditions that varied how risky the intervention was for third parties. In the loss-only, loss-or-gain, and gain-only conditions, third parties' choices influenced both their own outcomes and disputants'. Therefore, third parties' decisions could be motivated by self-regarding preferences, other-regarding preferences, or both. In contrast, third parties' choices in the fixed-payoff condition influenced disputants' outcomes but not their own; therefore, third parties' decisions in this condition were motivated only by other-regarding preferences.

As Fig. 3 shows, the incentive structure had a strikingly large effect on third-party intervention rates [χ^2 test: $\chi^2(3) = 50.18$, $P < 0.000001$], increasing the likelihood of intervention 10-fold in the gain-only condition compared with the loss-only condition (83.3% vs. 7.5%, respectively). Compared with the gain-or-loss condition, in which 39% of third parties chose to intervene, both the absence of potential gain in the loss-only condition [χ^2 test: $\chi^2(1) = 11.21$, $P < 0.001$] and the absence of potential loss in the gain-only condition [χ^2 test: $\chi^2(1) = 17.19$, $P < 0.0001$] significantly influenced third-party intervention rates. Fig. 3 also shows that intervention rates in the fixed-payoff condition (34.9%) were similar to those observed in the gain-or-loss condition [χ^2 test: $\chi^2(1) = 0.16$, $P = 0.694$]. These findings highlight the critical role self-interest plays in third-party intervention decisions. Finally, consistent with the findings of experiments 1–3 that the mere possibility of third-party intervention is sufficient to motivate high cooperation rates, disputants' cooperation rates were high and equivalent across the four conditions in experiment 4 [ranging from 90.4% to 94.3%; χ^2 test: $\chi^2(3) = 0.99$, $P = 0.80$] (Fig. 3).

Experiments 5 and 6

Experiments 5 and 6 used a different experimental paradigm to provide converging evidence for the critical role self-interest plays in shaping third parties' intervention decisions. We reasoned that individuals are motivated not to appear selfish; therefore, using self-

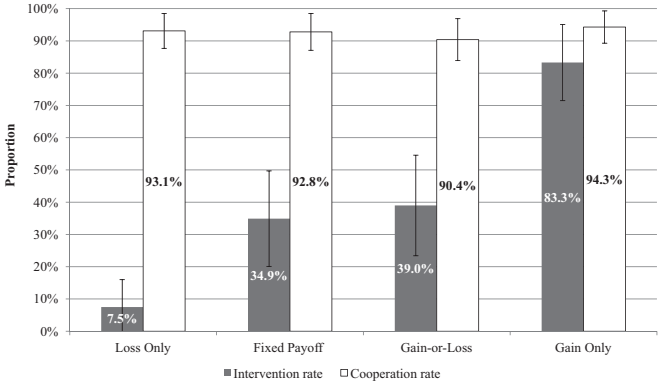

Fig. 3. Third-party intervention rates and disputants' cooperation rates as a function of incentive condition (experiment 4).

report measures of the extents to which self-interest shapes third parties' behavior provides a conservative estimate of the role of incentives in real-world intervention decisions.

These experiments used nearly identical procedures and materials; we therefore describe them together. In each experiment participants were randomly assigned to recall and describe in writing either a time they witnessed a conflict between two individuals and consciously chose to intervene or a time they witnessed a conflict between two individuals and consciously chose not to intervene. Participants subsequently rated on seven-point scales the perceived costs of intervening in the conflict (e.g., "I was afraid to lose my work place") and the perceived benefits of intervening in the conflict (e.g., "Intervening in the conflict would have increased my status in the eyes of others").

Experiment 5 was conducted in the context of workplace conflicts in organizations ($n = 206$ working adults) and participants recalled a conflict between two of their coworkers. Experiment 6 was conducted in the context of friendship groups ($n = 198$ working adults) and participants recalled a conflict between two of their friends. Fig. 4 depicts the results of experiments 5 and 6. As Fig. 4 shows, compared with participants who described a situation in which they chose not to intervene, participants who described a situation in which they chose to intervene perceived intervention to be less costly [independent samples t tests: experiment 5, $t(204) = -7.25$, $P < 0.001$; experiment 6, $t(196) = -2.89$, $P < 0.005$] and more beneficial [independent samples t tests: experiment 5, $t(204) = 7.87$, $P < 0.001$; experiment 6, $t(196) = 6.34$, $P < 0.001$]. These findings replicate and extend experiment 4's findings across two real-world contexts in which individuals commonly observe disputes and can choose whether or not to intervene in them. The fact that these studies replicated experiment 4's findings using a different methodology increases our confidence in the robust role that self-interest plays in shaping third parties' intervention decisions.

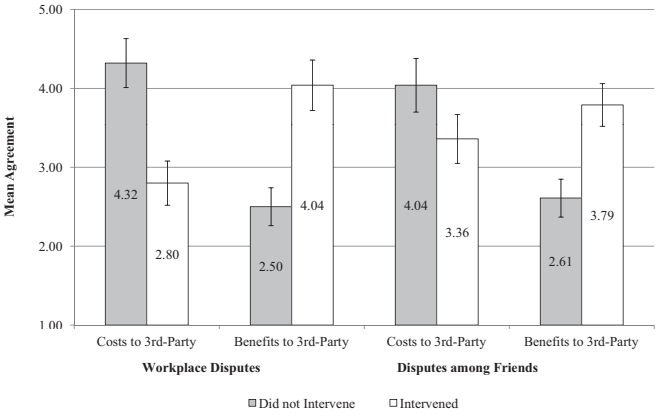

Fig. 4. Third parties' perceptions of the costs and benefits associated with intervening in disputes (experiments 5 and 6).

Discussion

Human capacity for costly conflict and harmful warfare is matched only by human ingenuity and resourcefulness in conflict management and dispute resolution. Conflict and conflict management coevolved in the course of human evolution, allowing individuals and groups to adaptively balance competition and cooperation (22). The history of third-party intervention in conflict is as long as the history of human conflict precisely because third parties have proved useful in curbing violence and destruction, to everyone's benefit (7). Others before us have studied how mediators, arbitrators, and norm enforcers shape social interactions (12–18). To the best of our knowledge, this is the first research to explore when, why, and how self-interested third parties transform competition into cooperation. Thus, our studies advance knowledge of third parties as peacemakers by investigating how informal, voluntary intervention in conflict influences disputants' behavior as well as highlighting the role of incentives in shaping third parties' intervention behavior.

Across three experiments we found that the possibility of informal, voluntary third-party intervention in conflict alters disputants' behavior and that the more probable intervention is, the higher the chances of mutual cooperation among disputants. These findings replicated across interpersonal and intergroup contexts, as well as with different payoff parameters (i.e., Fig. 1*A* vs. Fig. 1*B*). Experiments 4–6 demonstrated that incentives play a critical role in driving third parties' intervention decisions. The robust role of self-interest in shaping third-party intervention decisions replicated in the Peacemaker Game as well as in real-world interactions where individuals chose whether or not to intervene in workplace conflicts and conflicts among friends.

Our results suggest that third parties are typically pessimistic about the prospects of peacemaking. In particular, the finding that third parties' intervention rates are consistently below disputants' cooperation rates suggests that third parties underestimate their ability to positively influence cooperation. This "miscalculation" causes third parties to miss out on opportunities to promote collectively optimal, peaceful conflict resolution. As a whole, our findings show that to change the course and outcomes of interpersonal and intergroup disputes from "lose–lose" to "win–win" (23), third parties must also "win." Stated differently, to enjoy the collective benefits of third-party intervention in conflict, disputants should attract third parties by signaling to them that there is something to be gained by intervening in the conflict. Third parties are likely to intervene to the extent that they can transform the conflict from lose–lose to "win–win–win."

Future research may introduce systematic variations to the Peacemaker Game, for example, by altering the initial game used to model the bilateral conflict; whether third parties introduce rewards, punishments, or both; or whether the side payments introduced by the third party apply equally to both disputants. Providing disputants and third parties with opportunities to communicate before making their choices may promote collectively efficient coordination in the Peacemaker Game. In contrast, providing disputants and third parties with incomplete or imperfect information about their own and other parties' incentives may hinder such coordination. Exploring these possibilities will further enhance our understanding of voluntary third-party intervention in conflict.

Further, repeated interactions, which provide decision makers with feedback and hence opportunities to learn from experience, may accentuate the role incentives play in shaping disputants' and third parties' choices. Research on reinforcement-based learning in iterated games suggests that, to maximize their payoffs, disputants and third parties need to repeatedly experience circumstances where they make the optimal choice and receive the best possible payoff (24). Allowing disputants and third parties to interact repeatedly may reveal that decisions based on experienced outcomes diverge from decisions based on described payoffs. Observing low intervention rates by third parties may inhibit cooperation among disputants. In contrast, observing high cooperation rates among disputants may facilitate intervention by third parties. Future research may clarify the effect of experience on choice behavior in this paradigm.

Conclusion

Third parties fulfill a wide range of brokerage functions (6, 25), but none as important as artfully transforming war into peace (26). Our research highlights the potential benefits of constructively engaging third parties in conflict as game changers who alter disputants' preferences and behavior, thereby transforming harmful competition into collectively beneficial cooperation. The

ubiquity and effectiveness of third-party intervention in conflict make it not only the hallmark of diplomacy, as captured in the opening quotes by former US President Richard Nixon, but also a critically important remedy for handling destructive interpersonal and intergroup conflicts.

Materials and Methods

The research was approved by Stanford University's Institutional Review Board.

Experiment 1.

Participants. We recruited 172 Stanford University students (64% female; age $M = 23.0$, SD = 5.6; 80.1% US citizens; ethnicity 37% Caucasian, 46% Asian, 2% African–American, 6% Hispanic, and 9% other; one individual did not respond to the postdecision questionnaire) to participate in an online study involving a "group decision-making task."

Design and procedure. Experiment 1 used a 2 [role: disputant ($n = 114$) vs. third party ($n = 58$)] × 2 (third-party condition: peacemaker vs. observer), between-subject design. We randomly assigned participants to roles and conditions. Participation lasted under 10 min; we paid participants $3 for their time in addition to their earnings from the decision task. Participants read the instructions, made their decision, and then responded to a postdecision questionnaire.

The online survey software randomly assigned participants who signed up for the study to roles. This random assignment occasionally resulted in minimal mismatches between the number of pairs of disputants and the number of third parties in a given study (e.g., in experiment 1, we had 57 pairs of disputants but 58 third parties). Participants' choices in these rare cases of superfluous role holders were matched with other decision makers' choices in the dataset for payment purposes.

Materials - the Peacemaker Game. In the written instructions we explained to the participants that we will randomly assign them to three-person anonymous groups and that the decision of each person in the group will influence his or her own outcome as well as the outcomes of the other two individuals in the group. The terms disputant, third party, conflict, peacemaking, cooperation, and competition, or any equivalent terms, were never mentioned in the instructions. Instead, colors and shapes/letters were used to denote participants' roles and choice alternatives, respectively.

We assigned participants to one of three roles: "red," "blue," or "green." Red and blue were the disputants, who could choose either "triangle" or "square." Because red and blue were perfectly symmetric roles, we collapsed the data in all experiments across the different colors used to denote the disputant roles. Green was the third party, who could choose either "O" or "I." Consistent with Fig. 1*A*, all of the participants learned that if both red and blue choose the triangle (i.e., mutual cooperation), they will each get $3; if both red and blue choose the square (i.e., mutual competition), they will each get $1; and if one of them chooses the triangle and the other chooses the square (i.e., unilateral cooperation/competition), the person choosing the triangle will get $2 and the person choosing the square will get $4.

In the observer condition, green could not intervene in the conflict; instead, green's task was to predict the behavior of the disputants. Participants learned that for each correct prediction green will get $2. Thus, green will get $0 if they are wrong in both guesses, $2 if they correctly guess either red's or blue's choice, and $4 if they are right in both of their guesses. The payoff structure of this guessing task was identical to the payoff structure of the third party in the "peacemaker" condition, as described below.

In the peacemaker condition, green had to choose either O (i.e., not intervene) or I (i.e., intervene). Participants in this condition learned that if green chooses O, green will receive $2 no matter what blue and red choose, whereas red's and blue's payoffs will be influenced only by their own choices (as in the observer condition). However, if green chooses I, green will receive an amount of $0, $2, or $4, depending on the choices of blue and red. Thus, choosing to intervene introduced outcome interdependence between the third party and the disputants. When green chooses I, if red and blue choose the triangle (i.e., mutual cooperation), they each get $4, and green also gets $4. If red and blue choose the square (i.e., mutual competition), they each get $0 and green also gets $0. If one of the disputants chooses the triangle and the other chooses the square (i.e., unilateral cooperation/competition), red and blue each get $3 and green gets $2 (i.e., they neither gain nor lose relative to not intervening).

This payoff structure was designed such that the main difference between intervening and not intervening from the perspective of green was that the former option resulted in fixed payoffs (i.e., no variance) to green whereas the latter option resulted in variable payoffs to green (i.e., it is a higher risk option).

Experiment 2.

Participants. We recruited 237 Stanford University students (65% female, age $M = 23.1$, SD = 7.5; 83.8% US citizens; ethnicity 35% Caucasian, 45% Asian, 4.5% African–American, 8.5% Hispanic, and 7% other; three participants did not respond to the postdecisions questionnaire) to participate in an online study involving a group decision-making task.

Design and procedure. Experiment 2 used a 2 [role: disputant ($n = 158$) vs. third party ($n = 79$)] × 2 (third-party condition: peacemaker vs. observer) between-subject design. We randomly assigned participants to roles and conditions. Participation lasted under 10 min; we paid participants $3 for their time in addition to their earnings from the decision task. Participants read the instructions, made their decision, and then responded to a postdecision questionnaire.

Materials - the Peacemaker Game. The task was the same as in experiment 1 except for the following three changes. First, we assigned participants to three-person groups in each role and used a majority rule to determine each group's strategy. The members of each group were anonymous to each other and made their decisions independently and privately. Second, all of the participants, including both disputants and third parties, made 10 consecutive decisions in the game without receiving feedback between decisions. This method provided us with continuous measures of cooperation and intervention for disputants and third parties, respectively. Finally, in the observer condition, individuals assigned to the role of green could choose whether they wish to guess the behavior of red and green (and receive a variable payoff as in experiment 1 based on their accuracy) or opt out and get a fixed payoff of $2 instead of trying to guess disputants' choices.

Experiment 3.

Participants. We recruited 103 Stanford University students (55% female, age $M = 21.9$, SD = 4.1; 78.4% US citizens; ethnicity 40% Caucasian, 38% Asian, 9% African American, 10% Hispanic, and 3% other; one participant did not respond to the postdecision questionnaire) to participate in a laboratory study involving a group decision-making task. Participants arrived at the laboratory to take part in a mass testing session in which they completed multiple studies consecutively in a random order between participants. Experiment 3 was one of the studies included in the mass testing session. Each participant was seated in a private cubicle and completed the task independently and privately.

Design and procedure. Experiment 3 used a between-subject design with four conditions that varied the probability of third-party intervention (10%, 33%, 67%, or 90%). We randomly assigned participants to act in the role of disputants and to one of the four probability conditions. Participation lasted under 10 min; participants received $25 for their participation in the entire mass testing session, in addition to their earnings from the decision task. Participants read the instructions, made their decision, and then responded to a postdecision questionnaire.

Materials - the Peacemaker Game. The task was the same as in experiment 1 except for the following changes: First, we assigned participants to the role of disputants while a computer software acted on behalf of the third parties who were passive benefactors who got paid based on the outcomes of the games (without actually making any decisions themselves). The inclusion of passive benefactors made disputants' choices in the Peacemaker Game in experiment 3 comparable to those of the disputants in our other experiments by making sure that disputants' choices produce externalities (either losses or gains) also for third parties. We randomly assigned participants to one of four conditions: 10%, 33%, 67%, or 90% that the computer software acting on behalf of the third party will choose to intervene in the conflict. Second, as in experiment 2, we assigned participants to three-person groups in each role, and we used a majority rule to determine the group strategy. The members of each group were anonymous to each other and made their decisions independently and privately. Additionally, instead of using the payoffs from Fig. 1*A*, in which the game of Chicken transforms into a game of Harmony when the third party intervenes, we used the payoffs from Fig. 1*B*, in which the game of Prisoner's Dilemma transforms into a Maximizing Difference game upon third-party intervention.

Experiment 4.

Participants. We recruited 506 adults from Amazon's Mechanical Turk (39% female, age $M = 32.2$, SD = 10.7; 99.4% US citizens; ethnicity 78% Caucasian, 9% Asian, 6% African–American, 5% Hispanic, and 2% other; 31 participants did not respond to the postdecision questionnaire) to participate in an online study involving a group decision-making task. Our selection criteria involve only US-based MTurkers with approval rates of 98% or higher.

Design and procedure. Experiment 4 used a 2 [role: disputant ($n = 340$) vs. third party ($n = 166$)] × 4 (loss only/fixed payoff/gain or loss/gain only) between-subject design. We randomly assigned participants to roles and conditions.

Participation lasted under 10 min; we paid participants $0.50 for their time in addition to their earnings from the decision task. Participants read the instructions, made their decision, and then responded to a postdecision questionnaire.

Materials - the Peacemaker Game. The task was the same as in experiment 1 except for the following changes. In all four conditions, not intervening always resulted in a fixed profit of $2 regardless of disputants' choices; however, we systematically varied the possible consequences of intervention for the third parties. In the gain-or-loss condition, third parties' payoff was the same as in the peacemaker condition in experiment 1 (Fig. 1*C*). Thus, intervention could result in either gains or losses for the third party relative to not intervening. In the loss-only condition, third parties could never gain from intervening; thus, the most they could earn was $2, equal to their payoff for not intervening, and they could lose their $2 if disputants' choices resulted in mutual competition. In the fixed-payoff condition, third parties always received $2 regardless of their own or disputants' choices. Finally, in the gain-only condition, third parties could never lose from intervening; thus, they were ensured a gain of at least $2 if they intervened and could gain more (i.e., $4) if disputants' choices resulted in mutual cooperation.

Experiment 5.

Participants. We recruited 206 adults from Amazon's Mechanical Turk (50% female, age $M = 33.2$, SD = 10.5; 100.0% US citizens; ethnicity 80% Caucasian, 6% Asian, 8% African–American, 4.5% Hispanic, and 0.5% other) to participate in an online survey about conflict at work. Our selection criteria involved only US-based MTurkers with approval rates of 98% or higher who were fully employed at the time they took the survey.

Design and procedure. Experiment 5 used a between-subject design with two levels of the manipulated factor (recalling a conflict in which one intervened vs. not intervened). We randomly assigned participants to conditions. Participation lasted under 10 min; we paid participants $0.60 for their time. Participants read the instructions, wrote down a personal story that met the criteria in the condition they were assigned to, and then responded to questions about the situation they recalled.

Materials. We randomly assigned participants to recall and describe in writing a time they witnessed a conflict between two coworkers in their organization and consciously chose either to intervene or not to intervene in the conflict. Subsequently, participants rated various characteristics of the conflict situation, using seven-point scales, including the perceived costs and benefits of intervening in the conflict. The perceived costs and benefits were not restricted to material outcomes; rather, they included also social costs and benefits from intervening. Specifically, we assessed perceived costs with the following three items: "Intervening in the conflict was risky/costly for me," "Intervening in this conflict could jeopardize my relationships with people in the organization," and "I was afraid to lose my work place" (Cronbach's $\alpha = 0.77$). Perceived benefits were assessed with two items: "Intervening in the conflict was beneficial to me" and "Intervening in the conflict would have increased my status in the eyes of others" (Cronbach's $\alpha = 0.70$).

Experiment 6.

Participants. We recruited 198 adults from Amazon's Mechanical Turk (54% female, age $M = 32.1$, SD = 9.7; 98.9% US citizens; ethnicity 75% Caucasian, 6% Asian, 8.5% African–American, 9% Hispanic, and 1.5% other) to participate in an online survey about conflict among friends. Our selection criteria involved only US-based MTurkers with approval rates of 98% or higher who were fully employed at the time they took the survey.

Design and procedure. Experiment 6 used the same design as experiment 5. We randomly assigned participants to conditions. Participation lasted under 10 min; we paid participants $0.60 for their time. Participants read the instructions, wrote about a personal story that met the criteria in the condition they were assigned to, and then responded to questions about the situation they recalled.

Materials. The recall task was the same as in experiment 5 with the exception that participants recalled and described in writing a time they witnessed a conflict between two of their friends (rather than between two coworkers in their organization). Consistent with this change, we modified some of the items used to assess perceived costs and benefits to fit the friendship context. Specifically, we assessed perceived costs with the following three items: "Intervening in the conflict was risky/costly for me," "Intervening in this conflict could jeopardize my friendships with other people," and "I was afraid to lose one or both of my friends" (Cronbach's $\alpha = 0.77$). We assessed perceived benefits with the following three items: "Intervening in the conflict was beneficial to me," "Intervening in the conflict would have increased my status in the eyes of others," and "Intervening in the conflict would have improved my relationships with other people" (Cronbach's $\alpha = 0.72$).

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