Paradoxical thinking as a new avenue of intervention to promote peace

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In societies involved in an intractable conflict, there are strong socio-psychological barriers that contribute to the continuation and intractability of the conflict. Based on a unique field study conducted in the context of the Israeli–Palestinian conflict, we offer a new avenue to overcome these barriers by exposing participants to a long-term paradoxical intervention campaign expressing extreme ideas that are congruent with the shared ethos of conflict. Results show that the intervention, although counterintuitive, led participants to express more conciliatory attitudes regarding the conflict, particularly among participants with center and right political orientation. Most importantly, the intervention even influenced participants' actual voting patterns in the 2013 Israeli general elections: Participants who were exposed to the paradoxical intervention, which took place in proximity to the general elections, reported that they tended to vote more for dovish parties, which advocate a peaceful resolution to the conflict. These effects were long lasting, as the participants in the intervention condition expressed more conciliatory attitudes when they were reassessed 1 y after the intervention. Based on these results, we propose a new layer to the general theory of persuasion based on the concept of paradoxical thinking.

attitude change | psychological intervention

In recent years, the study of intractable conflicts has gained prominence within the social sciences (1, 2). This type of conflict is very difficult to resolve peacefully because it is fueled by socio-psychological barriers that play a key role in this impasse (3, 4). One major implication of these barriers is the tendency to freeze on conflict supporting societal beliefs and attitudes, and thus preserve hostility between the adversaries (5, 6). [Societal beliefs are defined as shared cognitions by society members that address themes and issues that society members are particularly occupied with, and which contribute to their sense of uniqueness (7).]

Freezing is characterized by rigidity and close-mindedness, such that information incongruent with the reigning cognitive-emotional structure is likely to be ignored, rejected, misinterpreted, or forgotten, whereas congruent information is accepted as valid (8, 9; see also ref. 10). In fact, cognitive freezing encourages tunnel vision with respect to the conflict and the means to resolve it. Thus, one major challenge for scholars and peace activists is to overcome these deeply rooted socio-psychological barriers by unfreezing the held conflict supporting collective narratives. A successful un-freezing process should increase the individual's openness to previously contradictory views regarding the conflict, the adversary, and the in-group (5). With this challenge, a growing body of research has attempted to identify methods of intervention that can unfreeze deeply rooted conflict-supporting narratives among groups in conflict (11–16).

In principle, most current interventions directly provide information that negates the held narratives to change beliefs regarding the conflict and the rival, or to create a suitable context to allow such information to emerge. These types of interventions include, for example, contact-based interventions (17), reframing the situation or the intergroup relations by perspective-taking (18), or presenting information about future losses (19).

The common denominator for these interventions is a cognitive validation process by which individuals test the new counter-information against held societal beliefs (i.e., narratives) (20).

The premises for this cognitive validation process lie in consistency theories postulating that information inconsistent with the held beliefs and attitudes causes dissonance, which may motivate people to shift away from their basic position and look for an alternative one (21, 22). Although the interventions described above have been successful under certain conditions, they all possess one important limitation: namely, they require that the counter-information be coded and comprehended and then destabilize the held conflict-supporting narratives that are a result of long socialization and are continuously reinforced by societal mechanisms and institutions. Thus, unfreezing depends on the strength of the aroused inconsistency between the presented information and the stored narratives. However, it is well known that individuals in these situations use different types of psychological defenses to maintain their central societal beliefs, often held with high confidence. Moreover, in many cases not only do individuals avoid being exposed to counter-information, but once it is identified, the individual will most likely ignore it rather than evaluate it.

Paradoxical Thinking

With the limitations of the existing conflict interventions in mind, we sought to develop another line of interventions, based on a different principle, with the following features: (i) a paradigm that does not provide counter-information to induce inconsistency; (ii) a paradigm that will be less threatening to individuals holding

Significance

The premise of most interventions that aim to promote peace-making is that information that is inconsistent with held beliefs causes tension, which may motivate alternative information seeking. However, individuals—especially during conflict—use different defenses to preserve their societal beliefs. Therefore, we developed a new paradoxical thinking intervention that provides consistent—though extreme—information, with the intention of raising a sense of absurdity but not defenses. We examined our hypotheses in a longitudinal field experiment and found that participants who were exposed to the intervention expressed more conciliatory attitudes regarding the conflict, even 1 y after the intervention, which also manifested in their voting (self-report measure) to more dovish parties in the Israeli 2013 elections.

conflict supportive narratives, and therefore will not lead to defensive reactions; (*iii*) a paradigm that will be easy to implement without requiring special conditions, such as contact between the parties in conflict, thereby eliminating logistical constraints and potential reprisals; (*iv*) a paradigm that has external validity; and (*v*) a paradigm that can potentially be used by practitioners.

In our search we came across evidence in clinical psychology (23, 24) suggesting that individuals who are provided with extreme information or instructions that are in line with their held beliefs or attitudes may change them even when they are extremely negative and well-entrenched. For example, Viktor Frankl (23) advised his patients to, instead of avoiding the fear-arousing stimulus, invite it or approach it: "to do, or wish to happen, the very things [they fear]" (23). Using this method, Frankl successfully treated difficult cases of obsessive-compulsive disorder and phobias. However, it should be stressed that Frankl's patients were motivated to change and to eliminate the symptoms that bothered them, which is not necessarily the case with members of a society involved deeply in intergroup conflict.

Drawing on this approach we developed a paradoxical thinking paradigm for changing societal beliefs and attitudes as a new intervention. In its essence, paradoxical thinking is the attempt to change attitudes by using new information, which is consistent with the held societal beliefs (narratives), but of extreme content that is intended to lead an individual to paradoxically perceive his or her currently held societal beliefs or the current situation as irrational and senseless. Thus, instead of eliciting inconsistency, the consistent extreme new information is supposed to induce paradoxical thinking, leading to the realization that something is wrong in the held societal beliefs. It is this realization that may, in our view, stimulate unfreezing of prior societal beliefs and attitudes as well as openness to alternative viewpoints.

By searching through social psychological literature we found additional evidence for our line of thinking in a study on superattitudinal questions conducted by Swann, Pelham, and Chidester (25). To change participants' conservative attitudes about women's roles, the researchers developed a strategy based on Watzlawick et al.'s (24) technique in which participants were presented with leading questions that encouraged participants to answer them with statements that were consistent with, but more extreme, than their prior attitudes (e.g., "Why do you sympathize with the feelings of some men that women are better kept barefoot and pregnant?"). The authors' results indicated that those scoring highly on attitude certainty showed the greatest change in the opposite direction of their prior conservative attitudes.

In line with this initial evidence, we decided to examine the paradigm of paradoxical thinking as an intervention in a real context of intractable conflict between Israeli Jews and Palestinians. In this context the goal of changing the narratives about the conflict is especially challenging because society members are well entrenched in their psychological positions. Thus, we provided messages about the Israeli–Palestinian conflict that were consistent with the themes of the Jewish Israeli ethos of conflict (1, 26), but much more extreme. Our intention was to lead participants to reevaluate their held societal beliefs and attitudes about the conflict. More bluntly, we assumed that encountering consistent but highly unreasonable arguments would lead participants to the realization that their held attitudes were nonsensical or inadequate.

Paradoxical Thinking Intervention: "The Conflict"

In the present study we collaborated with The Fund for Reconciliation, Tolerance, and Peace (an American nongovernment organization) that asked us to develop an innovative, theory-driven approach to mobilize public opinion for peace. This group felt that the Israeli–Palestinian peace process was at a dead-end, that both societies were dominated by deep despair, and that there was a need for a new psychological intervention to change

the reality. Following their request, we met with several advertising and public relations agencies and conducted 3- to 4-h classes on the general framework of socio-psychological barriers to peacemaking (5, 6) and the new idea of paradoxical thinking as a vehicle for attitude change. Based on the accumulative knowledge presented to the agencies, we asked them to develop an ingenious media intervention that would follow the paradoxical thinking principles. After examining different options, we selected an intervention called "The Conflict," which we thought best fitted the paradoxical thinking framework. The main idea behind this campaign was to present the Israeli–Palestinian conflict as a positive experiential factor, underlying Israeli Jewish identity, as opposed to the attempts to persuade the Israeli public that the conflict had negative outcomes on the society.

The advertising agency prepared six 30-s carefully constructed paradoxical thinking video clips, which resembled political campaign commercials. Importantly, these clips emphasized how Israeli Jews—who traditionally perceive themselves as striving for peace and viewing the conflict as necessary, despite its negative consequences—construe their identity primarily on their experiences of the conflict (see, for example, ref. 1). Specifically, each video presented one core Israeli identity theme (e.g., in-group justice, morality, unity), and ended by arguing that Jewish Israelis cannot afford to terminate the conflict because its continuation helps maintain beliefs of injustice/morality/unity. In this way we tried to unfreeze cognitions regarding one of the most powerful societal belief held by Israelis: the exclusive blame of the Palestinians for the continuation of the conflict. For example, one clip dealt with the Israeli perception of being moral at all times. The clip portrayed Israeli soldiers helping Palestinians, while an instrumental version of "What a Wonderful World," made famous by Louis Armstrong, was played. The clip ended with the message "in order to feel moral, we need the conflict" (www.youtube.com/watch?v=Jzq9Lt7DRiA). Importantly, the clip did not refute Israeli's belief in their morality, but only took that belief to its extreme form.

"The Conflict": Pilot Study

Before moving to the main intervention, we tested six different video clips developed by the advertising agency to induce paradoxical thinking. Only one of the videos yielded the expected results; therefore, the pilot study we describe below focuses on this video-clip only. In the pilot study 81 Jewish Israeli participants (M_{age} = 42.15 y, SD = 17.33, 41 males) were recruited online by an Israeli surveying company (Midgam) and were randomly assigned to one of two conditions: that is, paradoxical thinking (n = 40) and control (n = 41). In the paradoxical thinking condition, the participants were exposed to one paradoxical thinking video clip, conveying the message that "we need the conflict in order to have the strongest army in the world" (www.youtube.com/watch?v=9QbVYkQiFTU). In the control condition, the participants received an unrelated video clip of a tourism campaign for Israel.

Following the manipulation, we assessed various emotional and attitudinal responses (for details, see *SI Text*). We entered each of the dependent variables into a one-way ANOVA, controlling for sex, age, and level of education, as in the main study. Relative to the control condition (M = 2.14, SD = 1.25), participants reported significantly more distress and anxiety regarding the future state of Israel following the manipulation (M = 2.68, SD = 0.97), indicating that the videos were effective in inducing paradoxical thinking [$F(1, 79)$ = 4.78, $P < 0.05$, η^2 = 0.06]. At the same time, we found evidence that some of the participants perceived the paradoxical thinking video clip literally as opposed to paradoxically, as it led them to feel significantly more prideful in general and with regard to their Israeli identity (M = 3.87, SD = 1.42) compared with the control [M = 3.13, SD = 1.27; $F(1, 79)$ = 5.66, $P < 0.05$, η^2 = 0.07]. Additionally, participants perceived Israel as more responsible for

the continuation of the conflict following the paradoxical thinking manipulation (M = 2.83, SD = 1.41) compared with the control [M = 2.31, SD = 1.33; $F(1, 80) = 2.80$, $P < 0.10$, $\eta^2 = 0.04$]. Finally, the paradoxical thinking manipulation produced significantly more willingness to enact compromises to achieve a peaceful resolution to the conflict (M = 3.16, SD = 1.22) compared with the control condition [M = 2.54, SD = 1.37; $F(1, 80) = 4.85$, $P < 0.05$, $\eta^2 = 0.06$].

The data from the pilot study provided an initial indication that the paradoxical thinking manipulation led participants to perceive the position of the message as absurd, to subsequently feel more anxiety for the future of Israel, to perceive that Israel is more responsible for the continuation of the conflict, and as a result, to express more willingness to make compromises for a peaceful resolution. However, the pilot study also raised some concerns in that at least some of the participants perceived the paradoxical thinking video clip literally, rather than absurd, leading to an increase in their feelings of pride. Given this complexity, we elected to strengthen the power of the intervention by exposing participants to the manipulation at multiple time points, as is described below.

Main Study

Following these first findings from the pilot study, we hypothesized that the extended paradoxical thinking intervention would lead to a process of unfreezing of previously held conflict supporting societal beliefs and attitudes (i.e., narratives) and would also have a downstream effect on participants' view of the conflict and their willingness to compromise to achieve peace. We also hypothesized that this unfreezing effect would be mediated by a more thorough examination and reevaluation of the basic themes of the societal beliefs that comprise the Jewish Israeli ethos of conflict. To test this hypothesis, we focused on the perception of Palestinian responsibility for the continuation of the conflict, which engulfs several ethos of conflict beliefs: that is, that Israelis are peace loving and always reached out for peace and that the Palestinians are not real partners for peace because they prefer violence over negotiation. The latter premise, being continuously perpetuated by leaders, has become a major societal belief by Israeli society members (1, 26, 27). Furthermore, very different from previously tested interventions, we hypothesized that our paradoxical thinking intervention would have a stronger effect on center and rightwing participants (i.e., hawks), who hold deeply rooted conflict-supportive narratives. We assumed that for these individuals the intervention would be more paradoxical because they adhere more strongly to the societal beliefs of the ethos of conflict (23–25). Finally, we hypothesized that the paradoxical thinking intervention would have a long-lasting effect on participants' conciliatory attitudes, as it leads to an in-depth process of unfreezing and reevaluation of basic societal beliefs and attitudes.

To test our hypotheses we devised a nine-wave longitudinal field study, in which we randomly assigned 161 Israeli Jewish participants to either be exposed to the paradoxical thinking intervention or to the control group. Eight waves were conducted during the 2013 Israeli elections campaign, and the ninth wave was conducted 1 y after the elections. In waves two to seven, participants were asked to watch the carefully designed video. In the seventh wave, participants filled out the dependent variables questionnaire. In the eighth wave, conducted 2 d after the 2013 Israel elections, participants were asked to indicate if they had voted and for what party. Finally, in the ninth wave, the participants, unaware of the link between the present questionnaire and the study in which they had participated 1 y earlier, were asked to complete a short survey regarding the present negotiations between Israel and the Palestinians.

Results

Preliminary Analysis. To ensure that the groups did not differ initially in terms of political ideology, we ran a χ^2 test that showed no differences between the two groups, $\chi^2(2, n = 161) = 1.94$, $P = 0.38$. Next, to rule out the possibility that our dependent variables (which were measured during the seventh wave) were conceptually equivalent, we tested for multicollinearity. Examining the bivariate correlations between the dependent variables (Table S1), we found that correlations were all under 0.55; thus, they did not cross the multicollinearity threshold (0.7) (28).

Main Analysis. To examine our main hypotheses, we entered all dependent variables into a 2 (condition) × 3 (ideology) ANOVA. To eliminate any potential alternative explanation, we controlled for sex, age, and level of education throughout the statistical analyses, but the pattern of results is identical when not controlling for these background variables. We provide conditional main effects and interaction effects below. For means and SDs for all dependent variables, see Table S2.

Unfreezing. There was a significant main effect of the manipulation on unfreezing [$F(1, 152) = 4.71$, $P < 0.05$, $\eta^2 = 0.03$], such that participants in the paradoxical thinking condition reevaluated their positions to a greater extent (M = 44.72, SD = 26.63) than those in the control condition (M = 35.56, SD = 25.76). We found no interaction effect with political orientation [$F(2, 152) = 1.26$, not significant], suggesting that the manipulation had a similar unfreezing effect on all participants, irrespective of their political orientation.

Palestinian responsibility. There was a significant main effect of the manipulation on Palestinian responsibility [$F(1, 152) = 11.96$, $P < 0.001$, $\eta^2 = 0.07$]. There was also a significant interaction [$F(2, 152) = 5.74$, $P < 0.01$, $\eta^2 = 0.07$], such that the paradoxical thinking manipulation had no effect on leftists, but the Palestinians were perceived as less responsible for the conflict compared with the control by the centrists [M = 3.32, SD = 1.03 vs. M = 4.72, SD = 0.94; $F(1, 152) = 19.82$, $P < 0.001$, $\eta^2 = 0.12$], and marginally significant by the rightists [M = 4.81, SD = 0.76 vs. M = 5.12, SD = 0.82; $F(1, 152) = 2.78$, $P < 0.10$, $\eta^2 = 0.02$]. We would like to argue that the lack of effect on the leftists was not generated as a consequence of a floor effect, because their mean score on the perception of Palestinian responsibility scale was 3.07 across the two conditions, obtained from a Likert-type scale ranging from 1 to 6 (Table S2).

Willingness to compromise. Importantly, there was a significant main effect for the paradoxical thinking manipulation on willingness to compromise [$F(1, 152) = 6.50$, $P < 0.05$, $\eta^2 = 0.04$], such that participants in the paradoxical thinking condition were more supportive of settlement evacuation as a means to achieve a peaceful resolution of the conflict (M = 4.04, SD = 1.71) than those in the control condition (M = 3.39, SD = 1.52). In this case, there was no interaction effect [$F(2, 152) = 0.08$, not significant], suggesting that the manipulation had a similar effect on participants' willingness to compromise, irrespective of their political orientation.

Assessing the mediated model of willingness to compromise. Next, using Hayes' (29) PROCESS bootstrapping command with 5,000 iterations (model 6), we tested a serial mediation model with the following causal sequence: (*i*) induction of the paradoxical thinking intervention increased unfreezing of socio-psychological barriers; (*ii*) unfreezing led to a decrease in the perceived responsibility of the Palestinians over the continuation of the conflict; (*iii*) perceived Palestinian responsibility increased participants' willingness to compromise on Israeli settlement evacuation from the West Bank. Having already established the paradoxical thinking intervention main effects on both of the potential mediators and willingness to compromise, the serial mediation model was tested for the entire

sample, while controlling for the same demographic variables as in the previous analyses in addition to political orientation.

The model presented in Fig. 1 suggests that, as expected, the paradoxical thinking intervention increased the unfreezing of socio-psychological barriers, which in turn decreased perceived Palestinian responsibility, which in turn increased willingness to compromise. More importantly, the analysis revealed that the paradoxical thinking intervention effect on willingness to compromise ($\beta = 0.40$, SE = 0.13, $t = 3.09$, $P < 0.01$) was reduced after the two mediators (i.e., unfreezing of socio-psychological barriers and perception of Palestinian responsibility) were considered in the model ($\beta = 0.30$, SE = 0.13, $t = 2.28$, $P < 0.05$), and the indirect effect of paradoxical thinking (the unfreezing–Palestinian responsibility–willingness-to-compromise path) was significant [effect = 0.014, SE = 0.011, 95% confidence interval (CI): (0.002, 0.052)]. Because zero is not on the 95% CI, the indirect effect is significantly different from zero as $P < 0.05$, thus establishing an indirect effect.

Testing for an alternative mediation model with the reversed serial order of the mediators revealed a nonsignificant indirect effect: the 95% CI for the paradoxical thinking intervention (Palestinian responsibility–unfreezing–willingness to compromise path) was between −0.018 and 0.016 (i.e., zero was included in it). Thus, this result confirmed the validity of the previously presented model.

Self-reported voting in 2013 Israeli general elections. We conducted a logistic regression in which self-reported voting to either the dovish parties *Avoda* and *Meretz* (1) or all of the other parties (0) was regressed on the condition after controlling for the same demographic variables as well as political orientation. The analysis revealed a significant effect of condition, $b = 1.07$, Wald $\chi^2 = 3.78$, $P = 0.05$, odds ratio (OR) = 2.92, such that participants in the paradoxical thinking condition reported that they had voted more to the dovish parties, *Avoda* and *Meretz*, than those in the control. As can be seen in Fig. 2, this pattern is similar when looking at right-wing parties: namely, more voting for these parties (i.e., *Habait Hayehudi* and *Likud*) was found among the control condition participants than among the paradoxical thinking ones, although it did not reach statistical significance ($b = -0.74$, Wald $\chi^2 = 2.61$, OR = 0.48, $P = 0.11$).

Willingness-to-compromise scale: 1 y after the intervention. We found that even 1 y after the paradoxical thinking intervention, there was a significant main effect for the manipulation on the four-item willingness-to-compromise scale [$F(1, 91) = 4.13$, $P < 0.05$, $\eta^2 = 0.04$], such that participants in the paradoxical thinking condition were more supportive of compromises on issues that are at the heart of the Israeli–Palestinian negotiations as a means to achieve a peaceful resolution to the conflict (M = 3.61, SD = 1.21) than those in the control condition (M = 3.17, SD = 1.18). Again, there was no interaction effect with political orientation [$F(2, 91) = 0.07$, not significant], suggesting that the manipulation
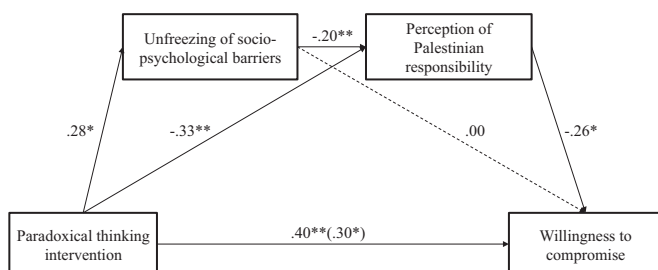

Fig. 2. Participants' voting distribution of the seven largest Israeli political parties (not including sectoral parties) arranged such that the most dovish party is on the left and the most hawkish party is the right, divided by the experimental condition.

had a similar effect on participants' willingness to compromise, irrespective of their political orientation.

Discussion

In the present longitudinal field experiment, using a new, counterintuitive, paradoxical thinking intervention, we found with a serial mediation model that the paradoxical thinking intervention had a significant effect on the unfreezing of socio-psychological barriers. This unfreezing, in turn, led to a more positive perception of the Palestinians by viewing them as less responsible for the continuation of the conflict. Of special importance in this analysis is the interaction effect, which suggests that this change applies specifically to centrist and rightists in the paradoxical intervention condition. This result suggests that individuals with well-established rightist views realize, in the process of viewing the extreme messages, that their beliefs may be senseless or inappropriate, whereas for leftists these messages only verify their political position.

In addition, the paradoxical intervention had an indirect effect on the willingness to compromise through this change in perceptions. This effect persisted even 1 y after the paradoxical thinking intervention was administered. This finding is unique mainly because of the striking result showing that the intervention had a long-lasting effect, which is a rare finding in research that investigates the effects of propeace interventions (30), especially given the strong likelihood that participants were exposed to many instances of negative information and events related to the conflict over the course of the year.

Finally, the most intriguing result of the study is the finding that participants in the paradoxical thinking intervention condition were more likely to report that they voted for more "propeace" political parties than those who did not go through the intervention process (i.e., control condition). In fact, this result goes beyond beliefs and attitudes and tests people's reports on their actual behaviors, which have a crucial impact on state policy. Although we are aware of the limitations of self-reported measures (e.g., ref. 31), we believe that in the present study the self-reported measure of participants' voting is indicative of participants' actual voting patterns, given that it was measured in such close proximity to the 2013 general elections.

Another potential limitation of our research, which should be acknowledged, is the final sample size of participants who completed the entire study. Because of the longitudinal design spanning over a year with nine waves of data collection, the retention rate was only 41% (*Methods*), although in longitudinal field studies this rate of attrition is typical (see, for example, ref. 32). Importantly however, we detected no meaningful differences on variables measured in the first wave between those who completed the study and those who dropped out. However, the

Fig. 1. Results of the serial mediation model assessing the paradoxical thinking intervention: unfreezing of socio-psychological barriers–perception of Palestinian responsibility–willingness-to-compromise path. Dashed line represents a nonsignificant path; solid lines represent significant paths with standardized path coefficients. *$P < 0.05$; **$P < 0.01$.
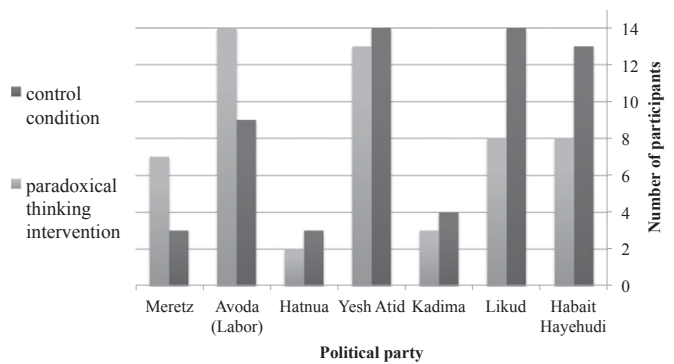
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result did lead to a relatively underpowered statistical analysis. Still, the results of the initial pilot study can be viewed as a pre-replication of the results reported here, and should therefore bolster confidence in the robustness of the reported effects despite the underpowered design.

The challenge of changing societal beliefs and attitudes regarding conflict, particularly in cases of intractable conflict, such as the Israeli–Palestinian conflict, is of special importance because such a change in favor of a compromising approach indicates overcoming the socio-psychological barriers, which obstruct the peacemaking process (5, 33). The predominant approach of previous conflict researchers attempting to create interventions that overcome barriers to peaceful resolution has been to supply participants with information that is inconsistent with their previously held beliefs regarding the conflict, with the aim of creating a desire to reduce the tension this dissonance yields. However, as described, this approach has important limitations. The paradoxical thinking intervention can complement such approaches because it does not threaten individuals, thereby reducing the activation of defense mechanisms and leaving them open to reconsidering their views, and eventually leading them to the conclusion that their previously held narrative is illogical. Although we did not directly assess the extent to which participants perceived the message as illogical or absurd, open-ended responses from the pilot study indicate that participants saw the messages as so extreme that they became absurd.

There is no doubt that there is a need for more systematic and programmatic research to further elucidate the paradigm of paradoxical thinking. Nevertheless, even in this early phase of the research program, it is clear that the paradigm of paradoxical thinking offers a way to overcome some of the obstacles, which are posed by the inconsistency paradigm. It is possible that different individuals are affected differently by different paradigms of persuasion. We think that paradoxical thinking is especially efficient for those individuals who hold their conflict-supporting narratives with great confidence, having been well socialized into them, because it opens the way for a person to reconsider his or her views without raising reactance. Thus, paradoxical thinking may open a new avenue not only for basic research, but also for practitioners who cope with an immense challenge in overcoming the socio-psychological barriers for peacemaking forces by changing the conflict-supporting narratives that fuel the continuation of the intractable conflicts.

Methods

This research was approved by The Interdisciplinary Center's Review Board and all participants completed an online consent form.

Sampling and Data Collection. Data were collected through a nine-wave Internet survey. Eight of the waves were conducted during the 2013 election campaigns in Israel and the ninth was conducted 1 y after the elections. Respondents were recruited online by an Internet surveying company and agreed to be surveyed every 3 to 4 d for 1 mo (leading up to election day, January 22, 2013). In each wave participants had ~48 h to respond to an email invitation. Those who did not were dropped and not contacted for consecutive waves. Of the Jewish Israeli participants (M_{age} = 40.45 y, SD = 13.34, 93 males), 161 completed all eight waves (64.7% of the baseline sample, n = 249). [Studies and reviews suggest that participation rates between 30% and 70% are, at most, weakly associated with bias, although bias should always be checked (34). Logistic regression was used to examine drop-out bias because of gender, political orientation, or the condition to which the participants were assigned. Gender was found to be a significant predictor of attrition ($P < 0.01$) and thus was controlled for throughout the statistical analysis. Both political orientation and condition were not found to be significant predictors of attrition ($P > 0.90$).] In exchange for participation, the participants received ~26 ILS (equivalent to US$7.50). The sample was quite representative of the Israeli Jewish population, slightly leaning toward the more hawkish side of the political map: 60.2% were rightists, 20.5% were centrists, and 19.3% were leftists.

Procedure. The first wave included measurements of demographic items, such as age, sex, political orientation, and educational attainment. Then, participants were randomly assigned to one of two conditions [i.e., paradoxical thinking (n = 81) and control (n = 80)]. [Initially, we had a third condition, which also followed the paradoxical thinking paradigm. The video clips in this condition were identical to those in the experimental condition, with the only difference being that they ended with the following question: "Do we have the courage to live without it?" (i.e., the conflict). However, we found no effect for this condition (i.e., participants reacted exactly like those in control condition); thus, we omitted it from the final analysis. Presumably, this outcome might be because our intended persuasive conclusion in the paradoxical thinking condition was more implicit than in this condition, leading participants to process the message more thoroughly and come to the conclusion on their own (for similar ideas, see refs. 35 and 36).] In waves two to seven participants were asked to watch the video clips and answer a number of questions verifying attention. Participants who answered one of these questions incorrectly were directed to the beginning of the experiment. In the seventh wave, participants filled out questionnaires measuring the dependent variables. In the eighth wave, conducted 2 d after the 2013 Israeli elections, participants were asked to indicate if they had voted and for what party. In the ninth wave, conducted approximately 1 y after the elections, participants were asked to complete a short survey regarding the present negotiations between Israel and the Palestinians.

Manipulation. Participants in the paradoxical thinking condition were asked to watch a short 5-min video containing three generic television commercials and three paradoxical thinking intervention clips in counterbalanced order. These generic advertisements served as distractors to maintain the experience of a routine advertising break. Participants watched a different set of video clips in each of the six waves, and in total were presented with 15 different "The Conflict" video clips, each focusing on a different theme. Control participants watched 5-min clips as well; however, they contained six generic television commercials (three of which were identical to those in the paradoxical thinking condition and appeared in the same order).

Measures. *Premanipulation measures.* During the first wave, we measured the following demographic variables: age, sex (1 = male, 2 = female), educational attainment (from 1 = elementary or did not attend to school at all, to 13 = doctorate). Finally, we included a standard self-defined item for measuring political orientation: rightists (n = 97), centrists (n = 33), and leftists (n = 31).

Dependent variables. During the seventh wave, we measured the following dependent variables: unfreezing, Palestinian responsibility, and willingness to compromise.

Unfreezing. Participants ranked three items indicating the extent (from 0 = not at all, to 100 = very much so) to which the video clips made them reevaluate their positions pertaining to the ethos of conflict themes (i.e., "To what extent did the movie clips make you doubt the saying: 'There is no partner on the Palestinian side'?"; "To what extent did the movie clips make you doubt the saying: 'Israel's hand has always been reaching out for peace'?"; and "To what extent did the movie clips make you doubt the saying: 'Israel is the ultimate victim of the Israeli–Palestinian conflict'?" Cronbach's α = 0.80).

Palestinian responsibility. Participants ranked three Likert-type items indicating the extent (from 1 = strongly disagree, to 6 = strongly agree) to which they perceived the Palestinians to be responsible for the continuation of the conflict (i.e., "The Palestinians can only blame themselves that the conflict has not been resolved yet"; "If the Palestinians had wanted conflict resolution, the conflict would have ended"; and "Peaceful resolution is unattainable because there is no partner on the other side"; Cronbach's α = 0.84).

Willingness to compromise. To capture downstream effects of the paradoxical thinking intervention on the most cardinal issue that prevents a peaceful resolution of the Israeli–Palestinian conflict, participants ranked a single Likert-type item indicating the extent (from 1 = highly oppose, to 6 = very much in favor) to which they were willing to evacuate some of the settlements in the West Bank to achieve a peaceful resolution (12).

Self-Reported Voting in 2013 Israeli General Elections. One week after the seventh wave and 2 d after the 2013 Israeli general elections, we asked participants if they had voted and, if so, for what party. Of the original 249 participants, 115 (46.2%, 55 of 125 in the intervention condition and 60 of the 124 in the control) disclosed the party they voted for, and indicated that they had not voted for sectoral parties (i.e., *Shas* and *Yahadut Ha'Torah*) (Fig. 2). (*Shas* and *Yahadut Ha'Torah* are sectoral political parties that represent

ultraorthodox Jewish Israelis and, as such, they mostly promote this sector's interests. Therefore, most, if not all of the people that vote for these parties are part of the sector they represent.) *Logistic* regression was used to examine drop-out bias caused by the condition to which the participants were assigned. The condition was not found to be a significant predictor of attrition ($P = 0.49$).

Willingness-to-Compromise Scale: 1 y After the Intervention. Twelve months after the paradoxical thinking intervention, in the ninth wave, the participants were contacted again using the same Internet platform to complete a short survey regarding the present negotiations between Israel and the Palestinians. The survey included various items related to the current political situation; among them were also items relevant for our predictions. Participants were unaware of the link between this questionnaire and the study in which they had participated 1 y earlier. Of the original 249 participants, 102 (41.0%, 49 of 125 in the intervention condition and 53 of the 124 in the control) completed the questionnaire. Two cases, one from each condition, were omitted from our analysis because of extreme responses of over three SDs compared with other participants in any of the items. In order not to disclose the link between the questionnaire and the intervention, the participants were asked only about their support for compromises that were particularly relevant to present-day negotiations.

The willingness-to-compromise scale was measured using four items. In addition to the item we administered in the original study regarding the Israeli settlements in the West Bank, participants evaluated three more Likert-type items indicating the extent (from 1 = highly oppose, to 6 = very much in favor) to which they were willing to compromise on issues that are at the heart of the Israeli–Palestinian current negotiations (i.e., the demand for recognition of Israel as a Jewish state, control over the Arab neighborhoods in East Jerusalem, and the division of Jerusalem as nonnegotiable; Cronbach's $\alpha = 0.84$).

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