

# Paradoxical Thinking as a Conflict-Resolution Intervention: Comparison to Alternative Interventions and Examination of Psychological Mechanisms

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## Abstract

Conflict-resolution interventions based on the paradoxical thinking principles, that is, expressing amplified, exaggerated, or even absurd ideas that are congruent with the held conflict-supporting societal beliefs, have been shown to be an effective avenue of intervention, especially among individuals who are adamant in their views. However, the question as to why these interventions have been effective has remained unanswered. In the present research, we have examined possible underlying psychological mechanisms, focusing on identity threat, surprise, and general disagreement. In a small-scale lab study and a large-scale longitudinal study, we compared paradoxical thinking interventions with traditional interventions based on providing inconsistent information. The paradoxical thinking interventions led rightists to show more unfreezing of held conflict-supporting beliefs and openness to alternative information, whereas the inconsistency-based interventions tended to be more effective with the centrist participants. Both studies provide evidence that the effects were driven by identity threat, surprise, and lower levels of disagreement.

## Keywords

intractable conflict, psychological intervention, attitude change, paradoxical thinking

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The intolerable cost of intractable conflicts in the millions who have died, and the many more who have become or are at risk of becoming refugees (e.g., Leitenberg, 2006; United Nations High Commissioner for Refugees, 2015), has led social scientists, practitioners, nongovernmental organizations (NGOs), and politicians to try to find innovative ways to resolve them through processes of peace making. Social psychologists, who have become increasingly more involved in this endeavor, have led to the understanding that intractable conflicts erupt and endure not only due to objective disagreements but also because of sociopsychological factors that lead society members to freeze on their conflict-supporting societal beliefs (e.g., Bar-Tal & Halperin, 2011).

Thus, the work of social psychologists has focused on attenuating these factors, by developing psychological interventions that can unfreeze these conflict-supporting beliefs (for a review, see Hameiri, Bar-Tal, & Halperin, 2014). However, traditionally most of these interventions have been based on the notion that to instigate unfreezing, one has to provide so-called enlightening messages (i.e., information) that are by nature inconsistent with the held conflict-supporting societal beliefs (Hameiri, Bar-Tal, et al., 2014). However,

these interventions often did not change opinions of those who were more extreme or adamant in their views, and therefore tended to resist the presented messages by using various defensive reactions. These individuals are motivated to view the knowledge they hold as truthful and valid because it fulfills various needs, and thus refuse even to consider alternative information (e.g., Hameiri, Bar-Tal, et al., 2014; Kruglanski & Webster, 1996).

## Paradoxical Thinking

To address this limitation, Hameiri, Porat, Bar-Tal, Bieler, and Halperin (2014) developed the paradoxical thinking conceptual framework. In principle, paradoxical thinking is the attempt to change held societal beliefs by providing a

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consistent message(s), but in an amplified, exaggerated, or even absurd manner. This paradoxical message is intended to lead an individual to perceive his or her currently held societal beliefs, or the current situation as irrational and senseless (Hameiri, Porat et al., 2014; Hameiri, Porat, Bar-Tal, & Halperin, 2016; see also Swann, Pelham, & Chidester, 1988). To a large extent, paradoxical thinking is based on the classic debating technique, *reductio ad absurdum* (Rescher, 2005), as well as on practical knowledge accumulated in clinical psychological treatments (e.g., Frankl, 1975; Miller & Rollnick, 2002; Watzlawick, Weakland, & Fisch, 1974).

Furthermore, based on this literature, we suggest that paradoxical thinking messages can range from blatantly exaggerated reflections of held societal beliefs (e.g., Frankl, 1975; Swann et al., 1988; see example of this approach below) to more subtle exaggerations or amplifications of held beliefs by extrapolating absurd conclusions from them (e.g., Miller & Rollnick, 2002; Rescher, 2005; Watzlawick et al., 1974). One example of the second approach is a technique, *amplified reflection*, offered by the clinical theory motivational interviewing (Miller & Rollnick, 2002), in which a therapist is instructed to reflect back on what a patient has said in an amplified or exaggerated form. For example, if a patient, who is a heavy smoker, argues that “studies about cancer do not prove anything,” the therapist should reply that “indeed, lung cancer has nothing to do with smoking—it just happens.”

Similar to *reductio ad absurdum*, when using the technique of amplified reflection, the therapist, in essence, is instructed to reflect back a subtle exaggeration or amplification, or an absurd conclusion that is extrapolated from the patient’s own resistance, attitudes, and beliefs. Based on this principle, Hameiri, Porat, et al. (2014) developed a paradoxical thinking intervention, and then tested it in the context of the Israeli–Palestinian conflict. This context is considerably different than the clinical one, as patients are motivated to go through the therapeutic process and heal, while that is usually not the case with society members in contexts of intractable conflicts (see Bar-Tal, 2013). Nevertheless, this intervention was found effective in both an online field study (Hameiri, Porat, et al., 2014) and a real-world campaign (Hameiri et al., 2016). However, the question as to why the intervention was effective remained unanswered, as Hameiri and colleagues only speculated about the psychological process but did not examine it empirically. Thus, the main goal of the present research was to examine the psychological mechanisms that underlie the observed effects of the paradoxical thinking intervention. In addition, the present study compares paradoxical thinking interventions with traditional interventions that involve providing information that is valid but inconsistent with currently held beliefs.

In social psychology, Swann et al. (1988) were first to use a paradoxical intervention to change conservative attitudes with regard to women. In their paradoxical-strategy condition, inspired by Watzlawick et al.’s (1974) technique, participants were asked 10 leading questions that encouraged

them to answer with statements that were consistent with, but blatantly more extreme than, their held attitudes (e.g., “Why do you sympathize with the feelings of some men that women are better kept barefoot and pregnant?”). In their conventional-strategy condition, participants were asked 10 leading questions that encouraged them to make statements that were inconsistent with their held attitudes (e.g., “Why do you think women make better bosses than men?”). Results indicated that in a sample of conservative individuals, those who were more certain in their conservative attitudes showed the greatest moderation of their previously held attitudes following the paradoxical intervention. At the same time, those who were less certain showed the greatest change following the inconsistent strategy.

In the study by Hameiri, Porat, et al. (2014), Jewish-Israelis were randomly assigned to be exposed either to a paradoxical thinking media campaign with messages related to the Israeli–Palestinian conflict or to a control condition with generic television commercials unrelated to the conflict. The paradoxical thinking campaign, named “The Conflict,” included YouTube video clips expressing ideas that were consistent with the shared conflict-supporting societal beliefs but in an amplified, exaggerated manner, by extrapolating an absurd conclusion from them. These 30-s video clips emphasized how Jewish-Israelis actually construe their identity based on their conflict-related experiences. Each video clip presented one core Jewish-Israeli identity theme—a conflict-supporting belief shared by most of the Jewish-Israeli population (e.g., belief in morality, unity, or victimhood; for example, Bar-Tal, 2013; Bar-Tal, Sharvit, Halperin, & Zafran, 2012)—and ended by suggesting that Israelis cannot afford to end the Israeli–Palestinian conflict because they actually need the conflict, as well as the societal beliefs to satisfy their needs. The paradoxical thinking intervention, compared to the control, led participants to express more conciliatory attitudes regarding the conflict, particularly among participants with center and right-wing political orientation. Interestingly, the effects had an influence on participants’ actual voting patterns, and were shown to last for one year after the intervention.

Next, to examine the paradoxical thinking intervention in the real world, Hameiri et al. (2016) designed a multichanneled campaign based on the materials of “The Conflict” video clips. This campaign was disseminated for six weeks in a small city in the center of Israel through online video clips and banners, billboard posters, and fieldwork in which t-shirts, balloons, and brochures were handed out. To assess the campaign’s effectiveness, Hameiri et al. (2016) designed a pre–post field experiment in which the paradoxical thinking condition was compared to a control condition with participants from the area surrounding the targeted city. None of the participants were aware of any links between the questionnaires that they were requested to fill in and the campaign that was being assessed. Results showed that, even though shortly after the initiation of the campaign, the

Israeli–Palestinian conflict reescalated with violent incidents all over Israel and the West Bank, the intervention led rightist participants to decrease their adherence to conflict-supporting beliefs across time. Furthermore, compared to the control condition, rightist participants in the paradoxical thinking condition expressed less support for aggressive policies and more support for conciliatory policies that the Israeli government should adopt in response to the violent escalation.

## The Psychological Mechanism Underlying Paradoxical Thinking

As the interventions that were based on the paradoxical thinking principles were found to be effective in moderating attitudes in the context of the Israeli–Palestinian conflict, the main challenge that remains is to discover the psychological mechanisms that underlie these observed effects. Therefore, in the present research we attempt to elucidate these psychological mechanisms, focusing on the hypothesized role of three components that we think serve as necessary conditions: a perceived threat to the individuals' identities, their surprised reaction, and general disagreement with the paradoxical thinking messages. Specifically, we hypothesize that paradoxical thinking interventions would lead to high levels of identity threat and surprise, while not stirring too much disagreement with the message in general. As will be elaborated next, this would be especially true when the paradoxical thinking intervention is compared to a traditional intervention, which is based on providing inconsistent information. We will now explain why we focused on these three components.

### Identity Threat

The paradoxical thinking messages force individuals to compare their held societal beliefs to the presented absurd beliefs and/or compare themselves to other group members who might hold these beliefs, although they normally would not make such comparisons nor would they *want* such comparisons to be made. Divergent beliefs may threaten the personal and social identity of individuals by challenging the validity of their beliefs, and also by identifying them with other group members who hold these beliefs (Jetten & Hornsey, 2014). Indeed, research on the black sheep effect (e.g., Marques & Paez, 1994) and moral rebels (Monin, Sawyer, & Marquez, 2008) suggests that individuals reject attitudinal deviants when they threaten their identity; that is, when the domain in question is relevant to the individuals and reflects badly on them. One of Monin et al.'s (2008) arguments for this effect is that the moral rebel makes the individual question her or his own attitudes and beliefs, which may lead to a dissonance-like state. Importantly, this state is invoked when the conveyed message, or behavior, is primarily dissonant with the individual's and/or her ingroup positive self-image, rather than with the individual's held beliefs in general. One

way to reduce this state is to derogate the attitudinal deviant, as was shown in previous research (e.g., Monin et al., 2008). However, another way by which individuals can reduce this state and protect their threatened identity is by distancing themselves from the source of threat by changing or moderating their own attitudes (Swann et al., 1988).

### Surprise

Paradoxical thinking is based on various paradoxical clinical psychological treatments. Although these treatments differ from one another in several respects, many of them suggest that their driving force is that the patient is disturbed, put off balance, shocked, or simply surprised (see, for example, Frankl, 1975; Watzlawick et al., 1974). The sense of surprise may lead to cognitive change when the old thinking is short circuited and the pieces suddenly come together, allowing the patients to bypass or derail resistance and ask themselves new questions, or to become open to new information. Furthermore, surprising messages (or stimuli) lead to focused attention, in-depth exploration, and in some cases to more attitude change (e.g., Petty, Fleming, Priester, & Feinstein, 2001).

### General Disagreement

We argue that the paradoxical thinking messages are effective because they evoke *lower* levels of general disagreement with message content when compared to conventional persuasive approaches that aim to induce inconsistency between the message content and held beliefs (dissonance). In the latter cases, dissonance follows if indeed there is at least some contradiction between the message *content* and the held beliefs (Festinger, 1957). Furthermore, Sherif and Hovland (1961) in their classic work postulated that the degree of attitude change increases with message discrepancy but only if the position of the message falls within an individual's latitude of acceptance. As, by definition, paradoxical thinking messages are consistent with the targeted individuals' held beliefs, they should fall within their latitude of acceptance, and thus stir up lower level of general disagreement with the message content compared with a message that is inconsistent with held beliefs.

Although Swann et al. (1988) similarly supported their explanation for the results outlined above with participants' level of general disagreement, it is nonetheless different from our proposed mechanism. Swann et al. based their explanation on Swann's (1983) self-verification theory. This theory postulates that those who are certain in their attitudes exert more resources to make others perceive them as they perceive themselves. Hence, in Swann et al.'s (1988) terminology, these individuals resisted, which in fact was operationalized as general disagreement, the attempt to make them be perceived as extremists, and therefore, as they did not perceive themselves as extremists, they moderated their answers to the leading questions, which eventually led to moderation of their attitudes. This means that, according to Swann et al., these

individuals moderated their attitudes specifically because they resisted the paradoxical thinking messages. Indeed, Swann et al. found that high-certain participants showed (marginally significant) more resistance regardless of their condition.

Conversely, we argue that the paradoxical thinking intervention is not effective based merely on the degree of resistance, or general disagreement with the paradoxical thinking messages in general, but rather, using Swann et al.'s (1988) terminology, on resisting a specific component of the messages that poses a threat to the individual's positive identity. At the same time, we argue that the paradoxical thinking messages surprise individuals due to the blatantly extreme statements, or the exaggerated, absurd conclusions that are drawn from the individuals' held attitudes and beliefs. Finally, as the paradoxical thinking messages are, by definition, consistent with the beliefs of the targeted audience, they should lead to *lower* levels of general disagreement with the message content compared to messages that are based on the inconsistency-based approach to persuasion. In support, although not discussed in the article, Swann et al. (1988) found that participants in the paradoxical-strategy condition showed significantly *lower* levels of resistance, that is, general disagreement, than those in the conventional-strategy (i.e., inconsistent) condition. In a similar vein, it is very likely that participants in Monin et al.'s (2008) studies did not disagree with the behavior of the moral rebels (as, for example, these moral rebels refused to make a counterattitudinal speech or take part in a racist task); but at the same time, did feel threatened, and as a consequence were in a dissonance-like state, by this behavior.

Ultimately, we argue that the threat to identity, coupled with a sense of surprise and lower levels of general disagreement compared to an inconsistent message, should challenge the validity of the individual's beliefs, leading to their unfreezing (e.g., Kruglanski & Webster, 1996). In turn, this process of unfreezing should increase the individual's openness to information to reach valid beliefs once again.

## The Present Study

To examine this hypothesized cognitive process, we conducted two studies in the context of the Israeli–Palestinian conflict among Jewish-Israeli participants. As the paradoxical thinking messages can range from blatant extremity or exaggerations (e.g., Frankl, 1975; Swann et al., 1988) to more subtle amplifications achieved by extrapolations of absurd conclusions (e.g., Miller & Rollnick, 2002; Rescher, 2005; Watzlawick et al., 1974), we designed two different paradigms that corresponded to these two variants. In Study 1, we conceptually replicated the study conducted by Swann et al. (1988) in the lab; and in Study 2 we conceptually replicated the study conducted by Hameiri, Porat, et al. (2014) in the field.

As a secondary goal, the present studies were also designed to address a limitation of the previous research, namely, that the paradoxical thinking interventions were compared to

control conditions that were either completely unrelated to the Israeli–Palestinian conflict (Hameiri, Porat, et al., 2014) or that included no treatment (Hameiri et al., 2016). Thus, in the present studies we also tested the effects of the paradoxical thinking intervention versus a manipulation based on the inconsistency-based approach to persuasion. We believe that for the purposes of the current study, the comparison to a baseline control condition is important for replicating previous findings and establishing the effectiveness of the paradoxical thinking intervention; and thus is more important for the analysis of the dependent variables. The comparison to the inconsistent approach is important for establishing the effectiveness of the paradoxical thinking intervention compared to a conventional means to intervene, but perhaps of equal importance, to examine the underlying psychological mechanism. Finally, it should be noted that in the present research we focused on the underlying psychological processes, and as dependent variables we used a measure of unfreezing and an indicator of openness to alternative information that was used in previous studies (Halperin & Bar-Tal, 2011). Thus, we did not include analyses of conflict-related beliefs.

Based on previous findings (Hameiri, Porat, et al., 2014; Hameiri et al., 2016; Swann et al., 1988), we hypothesized that the paradoxical thinking intervention would be more effective the more rightist the participants were; while the inconsistency-based approach would be more effective the less rightist the participants were, as they adhere less to conflict-supporting beliefs and are more open to alternative information to begin with (see, for example, Halperin & Bar-Tal, 2011). Furthermore, we hypothesized that the paradoxical thinking intervention would lead to more identity threat (as examined in Study 2) the more participants are rightists. This is because, in the Jewish-Israeli context, rightists adhere more to conflict-supporting beliefs (see Bar-Tal, 2013), and the paradoxical thinking messages were based specifically on these beliefs to draw the exaggerated, absurd conclusions. In terms of surprise, we hypothesized that the paradoxical thinking messages would lead to more surprise regardless of participants' political orientation, as these types of messages are less common (compared to inconsistent messages), and thus less expected in general; but that the level of general disagreement would be moderated by the participants' political orientation. Specifically, we hypothesized that the paradoxical thinking messages (vs. inconsistent messages) would lead to less disagreement, the more rightists the participants were; whereas inconsistent messages would lead to less disagreement, the less rightist the participants were. Finally, we hypothesized that identity threat, surprise, and general disagreement would mediate the effects between the paradoxical thinking messages and the dependent variables.

## Study I

As a first step to examine these questions, in Study 1, which was a small-scale lab experiment, we replicated the study

conducted by Swann et al. (1988) in the context of the Israeli–Palestinian conflict. Participants who hold conflict-supporting beliefs in varying degrees of adherence (as indicated by their political orientation; see Bar-Tal, 2013) were asked a series of 10 leading questions that were either paradoxical or inconsistent. These sessions were videotaped, and then two independent judges rated the extent to which participants were surprised from and disagreed with the questions, because only these two mechanisms were possible to observe. Threat to identity was added in the second study.

## Method

### Participants

We recruited 55 Jewish-Israeli (40 women,  $M_{\text{age}} = 22.58$ ,  $SD_{\text{age}} = 1.63$ ) undergraduates at the Interdisciplinary Center (IDC) Herzliya in exchange for course credits. Participants were drawn from a sample of students who were pretested at the beginning of the semester. Following Swann et al.'s (1988) procedure, that is, sampling only participants who showed high levels on a scale assessing conservative attitudes toward women, we selected individuals who had a mean score above 3 (labeled “agree to a limited extent”) on a nine-item scale ( $\alpha = .86$ ), assessing the participants' adherence to conflict-supporting beliefs. This scale was developed for the present study, with items pertaining to different ethos of conflict themes (see Hameiri, Porat, et al., 2014; Hameiri et al., 2016). This procedure assured that all the participants adhered to conflict-supporting societal beliefs—at least to a moderate extent. Given this criterion, in terms of political orientation, the sample was skewed to the right, with only 14.5% of the participants identifying themselves as moderate leftists, 38.2% as centrists, and 47.3% as moderate to extreme rightists. The sample size was determined by the number of participants we managed to sample before the end of the academic year. As the political reality changes rapidly in this context and during the summer break violence peaked with the outbreak of the *Knife Intifada*, we were not able to continue with the study at the beginning of the following academic year.

### Procedure

A few weeks following the online pretest, participants who met the above-mentioned criterion were invited individually to take part in a lab experiment. Upon their arrival, a male experimenter told them that their task would be to answer a series of questions pertaining to their political attitudes, to further investigate their responses to the pretest. Similar to Swann et al. (1988), the experimenter then asked the participants 10 leading questions. This was conducted as a discussion, such that the experimenter was not satisfied with short “yes” or “no” answers and probed participants' answers to fully understand them before moving on to the next question.

In the *inconsistent* condition ( $n = 26$ ), the leading questions encouraged participants to respond with inconsistent statements that negated their held conflict-supporting beliefs (i.e., dovish; for example, “Why do you think the real goal of the Palestinians is ultimately to live with us in peace?”). In the *paradoxical thinking* condition ( $n = 29$ ), the leading questions encouraged participants to respond with statements that were consistent with their held conflict-supporting beliefs, but blatantly more extreme (i.e., extremely hawkish; for example, “Why do you think that the real and only goal the Palestinians have in mind is to annihilate us, in a manner that transcends their basic needs such as food and health?”).<sup>1</sup> These sessions were videotaped with participants' agreement. After the interview, participants completed the dependent variables questionnaire. They were then debriefed, thanked, and dismissed (for complete information about the manipulation, see supplementary materials).

### Measures

**Political orientation.** As part of the pretest, participants were asked to answer a standard self-identifying item for measuring political orientation on a scale ranging from 1 = *extreme right* to 7 = *extreme left*.

**Surprise and general disagreement.** After the completion of the experiment, the interviews were coded by two trained independent judges, both holding a bachelor's degree in psychology, who were blind to participants' political orientation and the research hypotheses. Each judge watched the interviews and rated each participant's *surprise* (i.e., nervous smile and laughter following the questions, and facial expressions indicating surprise) and *disagreement* (i.e., expressing disagreement with the interviewer, and providing counterarguments). Ratings were made on a 5-point scale ranging from 0 = *not at all* to 4 = *very much*. Responses to the two surprise items and the two disagreement items were summed to provide composite indexes of participants' surprise and general disagreement. The internal consistency of these indexes (.72 and .82 according to Cronbach's  $\alpha$ , respectively) and the interrater reliability (.51 and .65 according to interclass correlation coefficient [ICC], respectively) were acceptable (Cicchetti, 1994).

**Unfreezing.** Following the manipulation, participants ranked a single item indicating the extent (from 0 = *not at all* to 100 = *very much so*) to which the interview made them reevaluate their beliefs, in general, pertaining to the Israeli–Palestinian conflict (see Hameiri, Porat, et al., 2014).

**Openness to alternative information.** Participants then ranked two items indicating the extent (from 1 = *not at all* to 6 = *a very large extent*) to which they were willing to (a) be exposed to Palestinian movies that reflect the Palestinian perspective of the conflict, and (b) personally meet Palestinians and hear

**Table 1.** Means, Standard Deviations, and Bivariate Correlations for All Variables in Study 1.

	M	SD	1	2	3	4	5	6	7
1. Openness to information	4.22	1.35	—	—	—	—	—	—	—
2. Unfreezing	21.24	17.69	.18	—	—	—	—	—	—
3. General disagreement	1.92	0.78	.02	-.30*	—	—	—	—	—
4. Surprise	1.99	0.69	.04	-.04	.51**	—	—	—	—
5. Political orientation (+left)	3.42	1.07	.31*	.10	-.01	-.01	—	—	—
6. Age	22.58	1.63	.19	-.31*	-.06	-.05	.25†	—	—
7. Gender (+woman)	—	—	.07	-.29*	-.21	-.21	-.09	.51**	—

† $p < .10$ . \* $p < .05$ . \*\* $p < .001$ .

their views about the conflict ( $r = .61$ ,  $p < .001$ ; see Halperin & Bar-Tal, 2011).

## Results

**Preliminary analysis.** To examine whether the conditions differ in terms of participants' political orientation, measured prior to the manipulation, we ran an independent-samples  $t$ -test that showed no difference between the paradoxical thinking and inconsistent conditions ( $M = 3.28$ ,  $SD = 1.13$  vs.  $M = 3.58$ ,  $SD = 0.99$ , respectively;  $p = .300$ ). Next, to rule out the possibility that our dependent variables conceptually overlapped, we examined the bivariate correlations (see Table 1 for means,  $SD$ s, and bivariate correlations), and found that they were all below the multicollinearity threshold suggested in the literature (.70; Bagozzi, Yi, & Phillips, 1991).

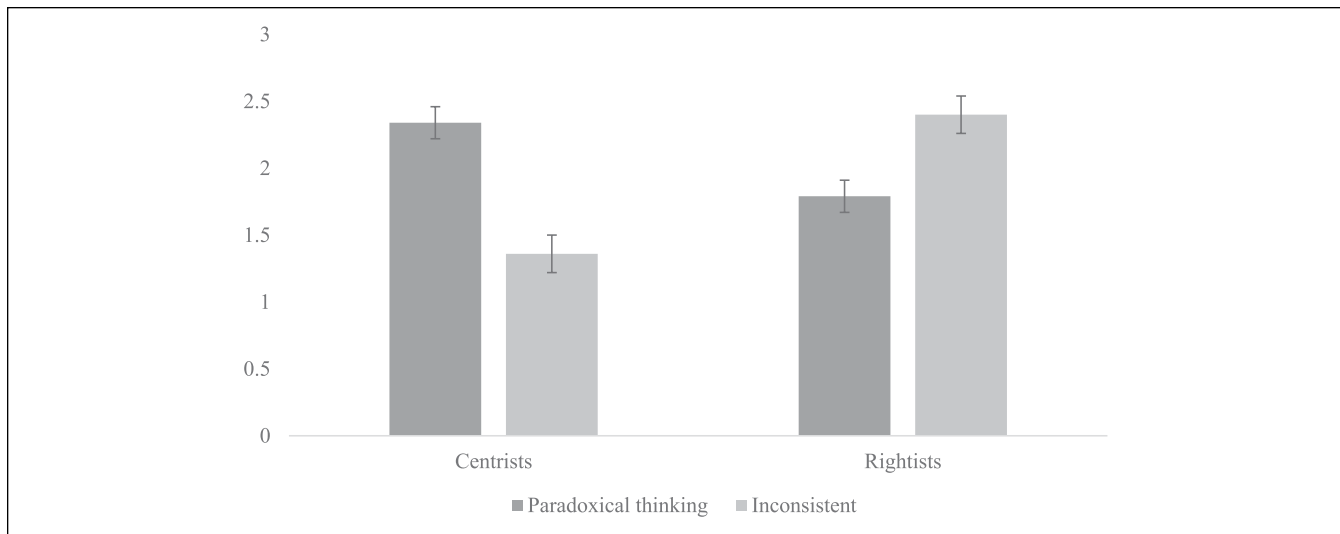
**Main analysis.** To examine the effects of our manipulation and the moderating effect of political orientation (centered at the mean) on our dependent variables, we used Hayes's (2013) PROCESS (Model 1) bootstrapping command with 5,000 iterations. Since we found that participants' gender and age correlated with our dependent variables (see Table 1), to eliminate potential alternative explanations, we controlled for these background variables throughout the statistical analysis. The pattern of results remains identical when not controlling for these variables.

**Surprise and general disagreement.** Participants' level of surprise was significantly predicted by the condition ( $b = -.62$ ,  $SE = 0.17$ ,  $t = -3.65$ ,  $p < .001$ ; 95% confidence interval [CI] =  $[-0.97, -0.28]$ ), such that participants in the paradoxical thinking condition were more surprised compared to those in the inconsistent condition ( $M = 2.30$  vs.  $M = 1.67$ , respectively). Analysis did not reveal a significant effect for political orientation or for the Condition  $\times$  Political Orientation interaction (both  $ps > .181$ ). Furthermore, participants' level of disagreement was not significantly predicted by either the condition or political orientation (both  $ps > .324$ ). However, disagreement was significantly predicted by the Condition  $\times$  Political Orientation interaction

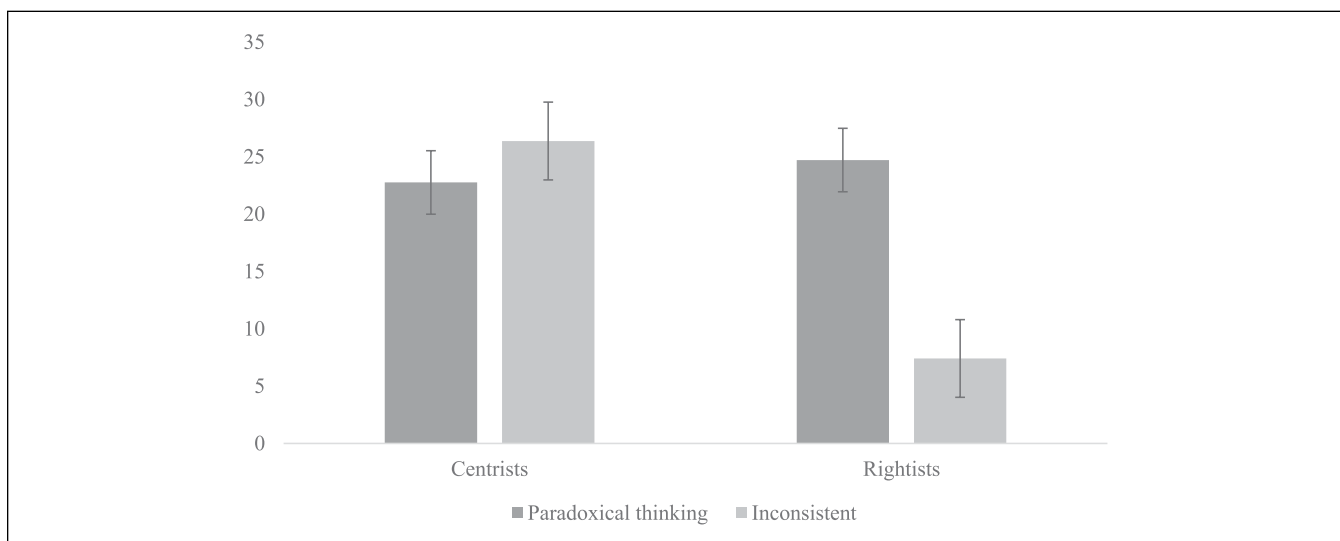
( $b = -.74$ ,  $SE = 0.18$ ,  $t = -4.08$ ,  $p < .001$ ; 95% CI =  $[-1.11, -0.38]$ ; see Figure 1). The interaction was examined using simple slope analysis (Aiken & West, 1991). Political orientation was fixed at  $+1SD$ , hereafter termed centrist participants, and  $-1SD$ , hereafter termed rightist participants. Conditional effects revealed that the rightist participants showed less disagreement in the paradoxical thinking condition compared to the inconsistent condition ( $M = 1.79$  vs.  $M = 2.40$ , respectively;  $b = .61$ ,  $SE = 0.27$ ,  $t = 2.22$ ,  $p = .031$ ; 95% CI =  $[0.06, 1.16]$ ), whereas for the centrist participants the pattern was reversed, such that participants in the paradoxical thinking condition showed more disagreement than those in the inconsistent condition ( $M = 2.34$  vs.  $M = 1.36$ , respectively;  $b = -.98$ ,  $SE = 0.27$ ,  $t = -3.63$ ,  $p < .001$ ; 95% CI =  $[-1.52, -0.44]$ ).

**Unfreezing.** The degree of unfreezing was marginally significantly predicted by political orientation ( $b = 3.72$ ,  $SE = 2.22$ ,  $t = 1.68$ ,  $p = .099$ ; 95% CI =  $[-0.73, 8.18]$ ), such that the more rightist the participants were, they tended to show less unfreezing. At the same time, the condition did not significantly predict unfreezing ( $p = .129$ ). More importantly, there was a significant Condition  $\times$  Political Orientation interaction ( $b = 9.81$ ,  $SE = 4.27$ ,  $t = 2.30$ ,  $p = .026$ ; 95% CI =  $[1.22, 18.39]$ ; see Figure 2). The conditional effects revealed that rightist participants in the paradoxical thinking condition showed significantly more unfreezing compared to the inconsistent condition ( $M = 24.71$  vs.  $M = 7.41$ , respectively;  $b = -17.30$ ,  $SE = 6.41$ ,  $t = -2.70$ ,  $p = .009$ ; 95% CI =  $[-30.19, -4.42]$ ); whereas for the centrist participants the effect was not significant ( $M = 22.76$  vs.  $M = 26.37$ , respectively;  $p = .569$ ).

**Openness to alternative information.** The degree of openness was significantly predicted by political orientation ( $b = .42$ ,  $SE = 0.18$ ,  $t = 2.38$ ,  $p = .021$ ; 95% CI =  $[0.07, 0.78]$ ), such that the more rightist the participants were, the less they showed openness. The condition did not significantly predict participants' openness ( $p = .290$ ). The analysis also revealed a marginally significant Condition  $\times$  Political Orientation interaction ( $b = .59$ ,  $SE = 0.34$ ,  $t = 1.73$ ,  $p = .090$ ; 95% CI =  $[-0.10, 1.28]$ ; see Figure 3). Conditional effects revealed that



**Figure 1.** The interactive effect of the manipulation and political orientation on participants' general disagreement in Study 1.  
Note. Error bars represent SEs.



**Figure 2.** The interactive effect of the manipulation and political orientation on participants' unfreezing in Study 1.  
Note. Error bars represent SEs.

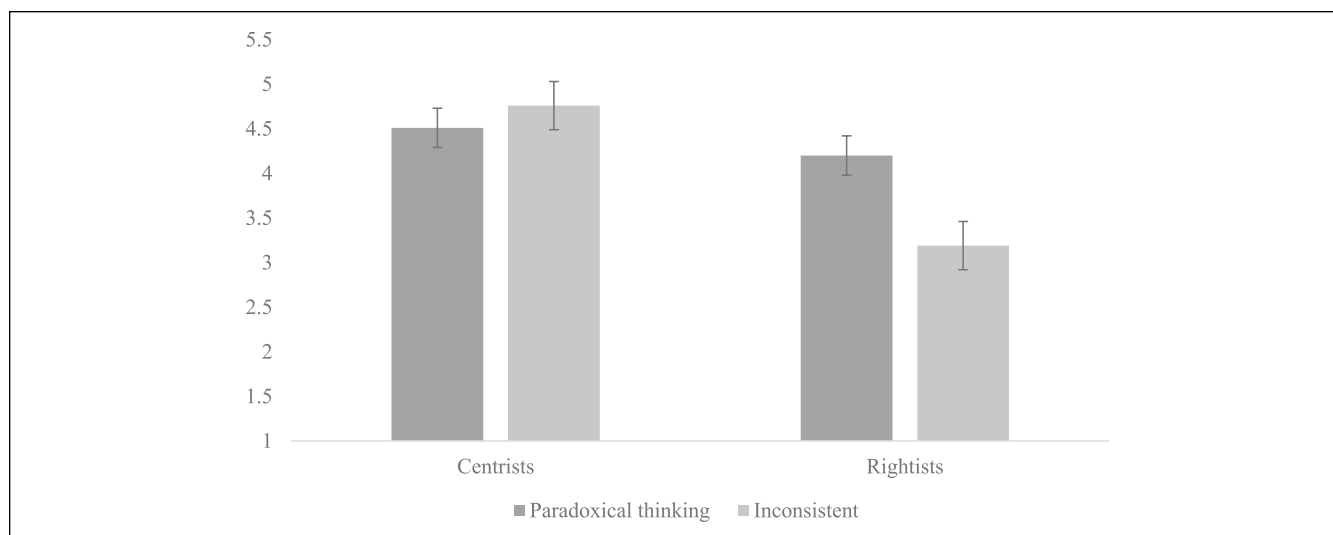
rightist participants in the paradoxical thinking condition tended to show more openness compared to the inconsistent condition ( $M = 4.20$  vs.  $M = 3.19$ , respectively;  $b = -1.01$ ,  $SE = 0.51$ ,  $t = -1.97$ ,  $p = .055$ ; 95% CI =  $[-2.05, 0.02]$ ); whereas for the centrist participants, the effect was not significant ( $M = 4.51$  vs.  $M = 4.76$ , respectively;  $p = .621$ ).

### Discussion

In Study 1, we found that for individuals who were more adamant in their held conflict-supporting beliefs (i.e., the rightist participants), the paradoxical thinking manipulation led to more unfreezing of held conflict-supporting beliefs

and marginally significantly more openness to alternative information. At the same time, contrary to our hypothesis, for the centrist participants, we did not find significant effects. With regard to the hypothesized psychological mechanisms, the paradoxical thinking manipulation led participants to be more surprised regardless of their political orientation. Interestingly, regarding participants' general disagreement, we found an interaction, such that the rightist participants showed less disagreement in the paradoxical thinking condition, while the centrist participants showed less disagreement in the inconsistent condition.

Study 1 suffered from several limitations that should be noted: First, our decision to conduct a conceptual replication



**Figure 3.** The interactive effect of the manipulation and political orientation on participants' openness to alternative information in Study 1.

Note. Error bars represent SEs.

to Swann et al. (1988) necessitated to run Study 1 in the lab utilizing the IDC Herzliya's student sample. Due to our inclusion criterion of sampling participants that, to the very least, moderately adhered to conflict-supporting societal beliefs, the student population from which we sampled our participants was rather small to begin with, ultimately yielding a small sample size. This, in turn, led to an underpowered statistical analysis. This may have resulted in the fact that, contrary to our hypotheses, several of the effects, including the effects involving mainly the centrist participants, were not statistically significant, or were only marginally significant, and thus should be interpreted with due caution. This also led to our decision not to test a comprehensive model that was derived from our hypotheses. Second, in Study 1, we did not assess participants' sense of identity threat, which we argued is an important psychological condition for a successful paradoxical thinking manipulation. Unfortunately, we did not assess this as part of the questionnaire, and the judges that coded the interviews were not able to assess it as well, as it is completely subjective, and does not carry behavioral or verbal manifestations that can be easily discerned, as opposed to surprise and general disagreement. Finally, Study 1 did not include a baseline control condition. Thus, we cannot decisively argue that our conditions had a positive effect rather than a deleterious one.

## Study 2

The aim of Study 2 was to address the aforementioned limitations, but more importantly, to provide a more comprehensive account of the hypothesized psychological mechanisms. Similar to Study 1, but different from previous projects (Hameiri, Porat, et al., 2014; Hameiri et al., 2016), Study 2

was designed to examine the effectiveness of the paradoxical thinking intervention compared with the inconsistency-based approach, as well as to a baseline control condition. As our paradoxical thinking stimulus, we used "The Conflict" campaign that had previously been developed and tested (Hameiri, Porat, et al., 2014; Hameiri et al., 2016). As our inconsistent stimulus, we used a campaign termed "The Partners" that was created by the *Geneva Initiative* (an Israeli–Palestinian NGO that involves various political leaders on both sides and promotes a two-state solution) to persuade the Jewish-Israeli public that the Palestinians are credible partners for peace. In other words, to create an inconsistent condition, we chose a theme that the vast majority of Jewish-Israelis agree upon, that is, that the Palestinians and their leaders are not partners for peace (e.g., Halperin & Bar-Tal, 2007), and presented videos arguing for the opposite. Similar to Hameiri, Porat, et al. (2014), we had a baseline control condition that included a stimulus that was unrelated to the Israeli–Palestinian conflict.

## Method

**Participants and procedure.** Data were collected through a five-wave online survey over the course of 4 weeks. Following Hameiri, Porat, et al.'s (2014) procedure, participants were recruited online by an Internet survey company and agreed to be surveyed every 4 to 5 days. In each wave, participants had approximately 72 hr to respond to an e-mail invitation. Those who did not respond were dropped and not contacted for consecutive waves. Of the original sample of 731 Jewish-Israelis, 494 completed all five waves (67.6% of the baseline sample;  $M_{\text{age}} = 39.27$ ,  $SD_{\text{age}} = 12.46$ , 54.9% men; see supplementary materials for drop-out bias



analysis). In exchange for participation, participants received 25ILS (equivalent to US\$6.50). In terms of political orientation, the final sample resembled the Jewish-Israeli population as 62.4% were rightists, 21.9% were centrists, and the remaining 15.7% were leftists.

Based on Hameiri, Porat, et al. (2014), the first wave of the study included measurements of demographic items, including participants' age, gender, and political orientation. Then, participants were randomly assigned to one of three conditions; that is, *paradoxical thinking* ( $n = 177$ ), *inconsistent* ( $n = 173$ ), and *control* ( $n = 144$ ). In Waves 2 to 4, participants were asked to watch the video clips corresponding to their assigned condition, answer several questions verifying attention, and then several items assessing the hypothesized psychological mechanisms. Participants who answered one of the attention questions incorrectly were directed to the beginning of the segment. In the fifth wave, after watching the video clips, participants filled out the dependent variables questionnaire.

**Manipulation.** Participants in the *paradoxical thinking* condition were asked to watch a short 3-min video containing three generic television commercials and three "The Conflict" clips in counterbalanced order (for more details on the paradoxical thinking video clips, see Hameiri, Porat, et al., 2014; Hameiri et al., 2016). In the *inconsistent* condition, participants were asked to watch a similar 3-min video with three commercials and three videos of "The Partners" campaign. These videos include statements addressed to the Israeli public by Palestinian leaders, suggesting that, contrary to what most Jewish-Israelis believe (Halperin & Bartal, 2007), there is a partner for peace on the Palestinian side. Participants watched a different set of video clips in each of the four waves, and in total were presented with five different "The Conflict" video clips, each focusing on a different theme; and five different "The Partners" video clips, each with a different Palestinian leader. *Control* condition participants watched a 3-min clip, which contained six generic television commercials (for complete information about the materials, see supplementary materials).

### Measures

**Political orientation.** During the first wave, participants answered the exact same political orientation item as in Study 1.

**Psychological mechanism measures.** During Waves 2 to 4, immediately after exposure to the video clips, we measured the hypothesized psychological mechanisms. In addition to surprise and general disagreement that were assessed in Study 1, in the present study, we assessed perceived identity threat. Unlike Study 1, in the present study these items were assessed using self-report measures. To simplify the statistical analysis, we averaged the three measurements of each variable across the three waves to obtain a single aggregated

score for each psychological mechanism. For a detailed longitudinal analysis that considers the changes across time for each of these variables, see the supplementary materials.

**Identity threat.** First, participants ranked three items indicating the extent to which (from 1 = *not at all* to 6 = *to a very large extent*) they felt threatened by the video clips (i.e., "This type of video clip threatens me," "This type of video clip threatens my worldview," and "This type of video clip threatens how I perceive the Israeli society";  $\alpha = .92$ ).

**Surprise.** On a similar scale, participants also ranked four items assessing the extent to which they were surprised by the video clips (i.e., "The video clips surprised me," "I did not expect to see what was displayed in the video clips," "Viewing the video clips left me quite amazed," and "The video clips confused me";  $\alpha = .89$ ).

**General disagreement.** Finally, using the same scale, participants ranked two items indicating the extent to which they generally disagreed with the messages conveyed in the video clips (i.e., "The messages conveyed in the video clips do not represent me, or reflect my attitudes" and "The video clips represent reality in a biased manner";  $\alpha = .87$ ).

**Dependent variables.** During the fifth and final wave, similar to Study 1, we measured levels of unfreezing and openness to alternative information.

**Unfreezing.** Participants ranked the exact same item as in Study 1 (this item was measured also in Waves 2-4, to assess change in unfreezing across time), to which we added three more items examining the extent to which participants reevaluated specific ethos of conflict themes (i.e., "There is no partner on the Palestinian side"; "Israel's hand has always been reaching out for peace"; and "Israel is the ultimate victim of the Israeli-Palestinian conflict";  $\alpha = .77$ ), derived from Hameiri, Porat, et al. (2014).

**Openness to alternative information.** Finally, participants ranked the exact same two items as in Study 1, to which we added an additional item assessing participants' willingness to personally meet the message source and hear his or her point of view ( $\alpha = .78$ ).

### Results

**Preliminary analysis.** First, to examine whether the conditions differed in terms of the participants' political orientation measured prior to the manipulation, we ran a one-way ANOVA that showed no differences between the paradoxical thinking, inconsistent and control conditions ( $M = 3.29$ ,  $SD = 1.23$ ,  $M = 3.13$ ,  $SD = 1.28$  and  $M = 3.26$ ,  $SD = 1.19$ , respectively;  $p = .448$ ). Next, to rule out the possibility that our variables were conceptually equivalent, we examined the

**Table 2.** Means, Standard Deviations, and Bivariate Correlations for All Variables in Study 2.

	M	SD	1	2	3	4	5	6	7	8
1. Openness to information (t5)	2.76	1.32	—	—	—	—	—	—	—	—
2. Unfreezing (t5)	25.39	22.21	.26**	—	—	—	—	—	—	—
3. Identity threat (t2-t4)	1.77	0.92	.01	.24**	—	—	—	—	—	—
4. General disagreement (t2-t4)	3.42	1.34	-.17**	-.23**	.35**	—	—	—	—	—
5. Surprise (t2-t4)	2.16	0.89	.11*	.26**	.37**	.06	—	—	—	—
6. Political orientation (+left)	3.23	1.23	.36**	.33**	-.07	-.22**	-.03	—	—	—
7. Age	39.27	12.46	.06	.05	-.11*	-.07	-.05	.22**	—	—
8. Gender (+woman)	—	—	-.05	-.04	-.04	.01	-.11*	-.06	-.05	—

\* $p < .05$ . \*\* $p < .001$ .

bivariate correlations (see Table 2 for means, *SDs*, and bivariate correlations), and found that all were below the suggested multicollinearity threshold (Bagozzi et al., 1991).

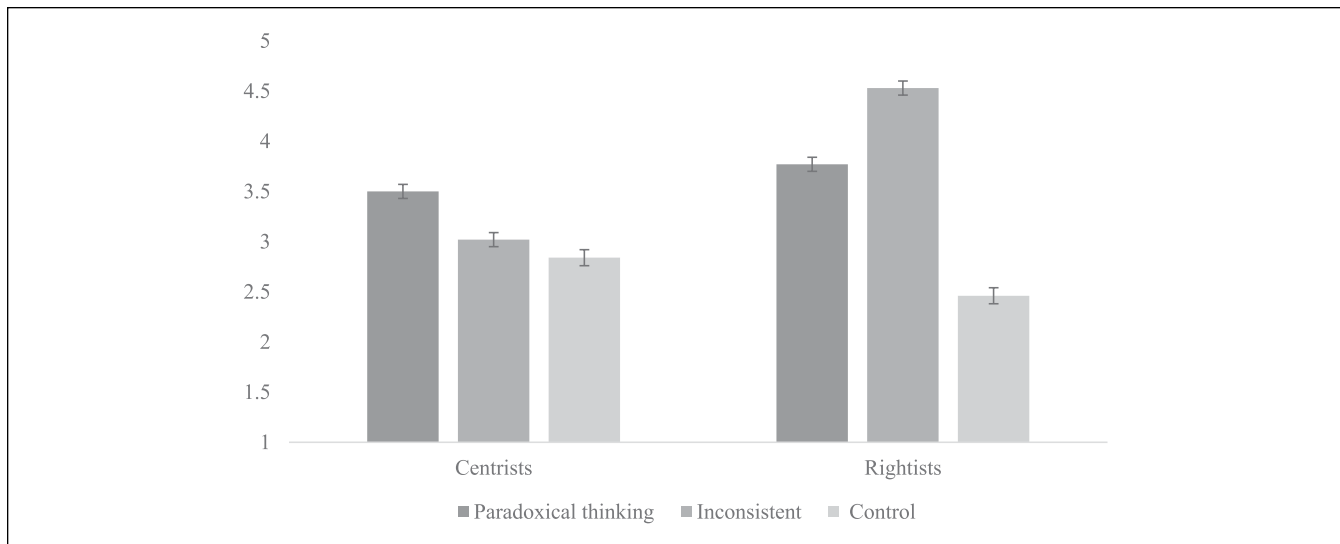
**Main analysis.** To examine the effects of our paradoxical thinking intervention, compared to both the inconsistent and the control conditions, and the moderating effect of participants' political orientation (centered at the mean) on our hypothesized psychological mechanisms and dependent variables, we used Hayes's PROCESS (Model 1) bootstrapping command with 5,000 iterations for a multicategorical independent variable by using indicator coding (Hayes & Montoya, 2017). PROCESS created two dummy variables with the paradoxical thinking condition identified as a reference group (coded 0 in both *D1* and *D2*). Thus, throughout the analysis, *D1* reflected the paradoxical thinking versus inconsistent comparison, and *D2* reflected the paradoxical thinking versus control comparison, allowing us to compare the paradoxical thinking condition with both the inconsistent and the control conditions in the same model (as the inconsistent vs. control comparison was not the focus of the present study, we added this analysis to the supplementary materials, and only refer to it in footnotes where appropriate). As in Study 1, we controlled for participants' age and gender throughout the statistical analysis, but the pattern of results remains identical when not controlling for these background variables.

**Identity threat.** The degree to which participants sensed threat to their identity was significantly predicted by both the *D1* and *D2* comparisons ( $b = -.19$ ,  $SE = 0.09$ ,  $t = -1.99$ ,  $p = .047$ ; 95% CI =  $[-0.37, -0.002]$  and  $b = -.67$ ,  $SE = 0.10$ ,  $t = -6.79$ ,  $p < .001$ ; 95% CI =  $[-0.87, -0.48]$ , respectively), such that participants in the paradoxical thinking condition ( $M = 2.02$ ) sensed more threat to their identity compared to both the inconsistent ( $M = 1.84$ ) and the control ( $M = 1.35$ ) conditions, regardless of their political orientation. Contrary to our hypothesis, all other effects were not significant (all  $ps > .111$ ).<sup>2</sup>

**Surprise.** The degree to which participants were surprised by the video clips was significantly predicted by

their political orientation ( $b = -.12$ ,  $SE = 0.05$ ,  $t = -2.25$ ,  $p = .025$ ; 95% CI =  $[-0.23, -0.02]$ ), such that the more rightist they were, the more they were surprised. Surprise was also predicted by the *D1* and *D2* comparisons ( $b = -.28$ ,  $SE = 0.09$ ,  $t = -3.04$ ,  $p = .002$ ; 95% CI =  $[-0.47, -0.10]$  and  $b = -.40$ ,  $SE = 0.10$ ,  $t = -4.11$ ,  $p < .001$ ; 95% CI =  $[-0.60, -0.21]$ , respectively), such that participants in the paradoxical thinking condition were more surprised ( $M = 2.38$ ) compared with both the inconsistent ( $M = 2.09$ ) and the control ( $M = 1.97$ ) conditions, regardless of their political orientation. Finally, we also found a significant *D1*  $\times$  Political Orientation interaction ( $b = .18$ ,  $SE = 0.07$ ,  $t = 2.45$ ,  $p = .014$ ; 95% CI =  $[0.04, 0.33]$ ). Conditional effects revealed that the rightist participants were more surprised in the paradoxical thinking condition compared with the inconsistent condition ( $M = 2.53$  vs.  $M = 2.02$ , respectively;  $b = -.51$ ,  $SE = 0.13$ ,  $t = -3.90$ ,  $p < .001$ ; 95% CI =  $[-0.77, -0.25]$ ); while for the centrist participants, levels of surprise were not significantly different between the conditions ( $M = 2.23$  vs.  $M = 2.17$ , respectively;  $p = .656$ ). The *D2*  $\times$  Political Orientation interaction was not significant ( $p = .151$ ).<sup>3</sup>

**General disagreement.** The degree to which participants disagreed with the video clips was significantly predicted by the *D2* comparison ( $b = -.98$ ,  $SE = 0.13$ ,  $t = -7.46$ ,  $p < .001$ ; 95% CI =  $[-1.23, -0.72]$ ), such that participants in the paradoxical thinking condition showed more disagreement compared with the control condition, regardless of their political orientation ( $M = 3.63$  vs.  $M = 2.65$ , respectively). More importantly, levels of disagreement were also predicted by both the *D1* and *D2* interactions with political orientation ( $b = -.50$ ,  $SE = 0.10$ ,  $t = -5.09$ ,  $p < .001$ ; 95% CI =  $[-0.70, 0.31]$  and  $b = .26$ ,  $SE = 0.11$ ,  $t = 2.44$ ,  $p = .015$ ; 95% CI =  $[0.05, 0.47]$ , respectively; see Figure 4). Conditional effects revealed that the rightist participants in the paradoxical thinking condition disagreed more compared with the control ( $M = 3.77$  vs.  $M = 2.46$ , respectively;  $b = -1.30$ ,  $SE = 0.19$ ,  $t = -6.83$ ,  $p < .001$ ; 95% CI =  $[-1.68, -0.93]$ ) but disagreed less compared with the inconsistent condition ( $M = 4.53$ ;  $b = .76$ ,  $SE = 0.17$ ,  $t = 4.39$ ,  $p < .001$ ; 95% CI =  $[0.42, 1.11]$ ). For the centrist participants, similar to the rightists,



**Figure 4.** The interactive effect of the manipulation and political orientation on participants' general disagreement in Study 2. Note. Error bars represent SEs.

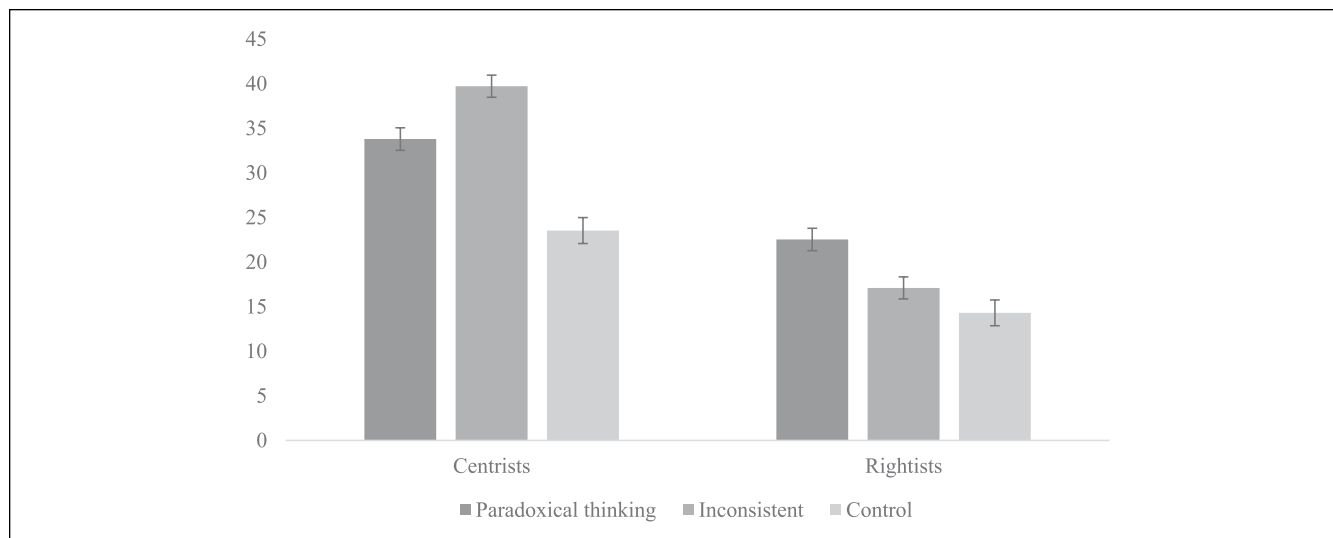
those in the paradoxical thinking condition disagreed more compared to the control condition ( $M = 3.50$  vs.  $M = 2.84$ , respectively;  $b = -.65$ ,  $SE = 0.18$ ,  $t = -3.57$ ,  $p < .001$ ; 95% CI =  $[-1.01, -.29]$ ). Differently from the rightist participants, the difference between the paradoxical thinking and inconsistent conditions was completely reversed, as centrist participants disagreed *more* in the paradoxical thinking condition than in the inconsistent condition ( $M = 3.02$ ;  $b = -.48$ ,  $SE = 0.17$ ,  $t = -2.74$ ,  $p = .006$ ; 95% CI =  $[-0.82, -0.14]$ ). All other effects were not significant (all  $ps > .124$ ).<sup>4</sup>

**Unfreezing.** The degree of unfreezing was significantly predicted by participants' political orientation ( $b = 4.56$ ,  $SE = 1.26$ ,  $t = 3.61$ ,  $p < .001$ ; 95% CI =  $[2.08, 7.05]$ ), such that the more rightist participants were, the less unfreezing they reported. Unfreezing was also predicted by the  $D2$  comparison ( $b = -9.24$ ,  $SE = 2.32$ ,  $t = -3.99$ ,  $p < .001$ ; 95% CI =  $[-13.80, -4.69]$ ), such that participants in the paradoxical thinking condition reported more unfreezing compared to the control, regardless of their political orientation ( $M = 28.16$  vs.  $M = 18.92$ , respectively). More importantly, we found a significant  $D1 \times$  Political Orientation interaction ( $b = 4.60$ ,  $SE = 1.75$ ,  $t = 2.63$ ,  $p = .009$ ; 95% CI =  $[1.16, 8.04]$ ; see Figure 5). Conditional effects revealed that rightist participants reported marginally significant more unfreezing in the paradoxical thinking compared to the inconsistent condition ( $M = 22.53$  vs.  $M = 17.10$ , respectively;  $b = -5.43$ ,  $SE = 3.08$ ,  $t = -1.76$ ,  $p = .078$ ; 95% CI =  $[-11.47, 0.62]$ ); while this pattern was reversed when examining the centrist participants ( $M = 33.79$  vs.  $M = 39.71$ , respectively;  $b = 5.93$ ,  $SE = 3.09$ ,  $t = 1.92$ ,  $p = .056$ ; 95% CI =  $[-0.15, 12.01]$ ). All other effects were not significant (all  $ts < 1$ ).<sup>5</sup>

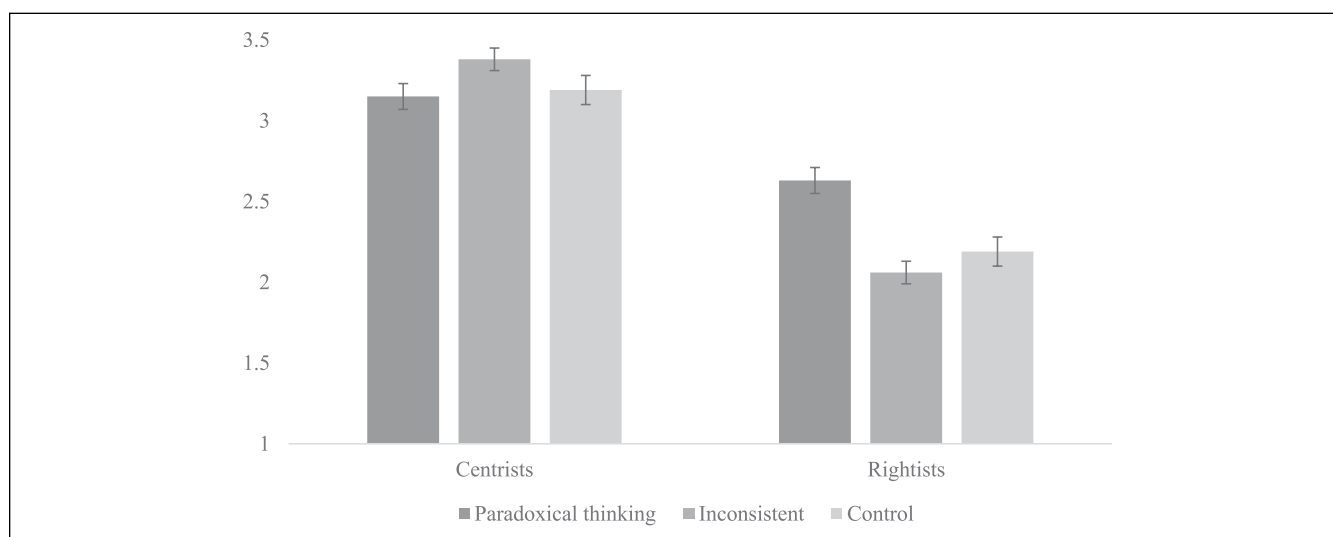
**Openness to alternative information.** The degree of openness was significantly predicted by participants' political

orientation ( $b = .21$ ,  $SE = 0.08$ ,  $t = 2.77$ ,  $p = .006$ ; 95% CI =  $[0.06, 0.36]$ ), such that the more rightist participants were, the less openness they showed. More importantly, we found a significant  $D1 \times$  Political Orientation interaction ( $b = .33$ ,  $SE = 0.11$ ,  $t = 3.10$ ,  $p = .002$ ; 95% CI =  $[0.12, 0.53]$ ) and a marginally significant  $D2 \times$  Political Orientation interaction ( $b = .19$ ,  $SE = 0.11$ ,  $t = 1.69$ ,  $p = .092$ ; 95% CI =  $[-0.03, 0.42]$ ; see Figure 6). The conditional effects revealed that the rightist participants reported significantly higher levels of openness in the paradoxical thinking condition ( $M = 2.63$ ) compared to both the inconsistent ( $M = 2.06$ ;  $b = -.57$ ,  $SE = 0.18$ ,  $t = -3.09$ ,  $p = .002$ ; 95% CI =  $[-0.93, -0.21]$ ) and the control conditions ( $M = 2.19$ ;  $b = -.43$ ,  $SE = 0.20$ ,  $t = -2.13$ ,  $p = .033$ ; 95% CI =  $[-0.83, -0.03]$ ). However, for the centrist participants there were no significant differences between the paradoxical thinking ( $M = 3.15$ ) and both the inconsistent ( $M = 3.38$ ) and control conditions ( $M = 3.19$ ; both  $ps > .208$ ). All other effects were not significant (all  $ps > .165$ ).<sup>6</sup>

**Assessing the moderated serial mediation model of openness to alternative information.** We next tested the full hypothesized moderated mediation model with serial mediation, in which the hypothesized psychological mechanisms (i.e., identity threat, surprise, and general disagreement), and in turn the degree of unfreezing, would transmit the effect of the Condition  $\times$  Political Orientation interaction on participants' openness to alternative information. Thus, as a first stage, we used Hayes's (2013) PROCESS (Model 8) bootstrapping command with 5,000 iterations to test the indirect effect of the interaction term on unfreezing through identity threat, surprise, and general disagreement. However, as the PROCESS add-on cannot estimate a moderated mediation model for multicategorical variables, we created the same  $D1$  (paradoxical thinking vs. inconsistent) and  $D2$  (paradoxical thinking vs. control) dummy variables that were described



**Figure 5.** The interactive effect of the manipulation and political orientation on participants' unfreezing in Study 2.  
Note. Error bars represent SEs.

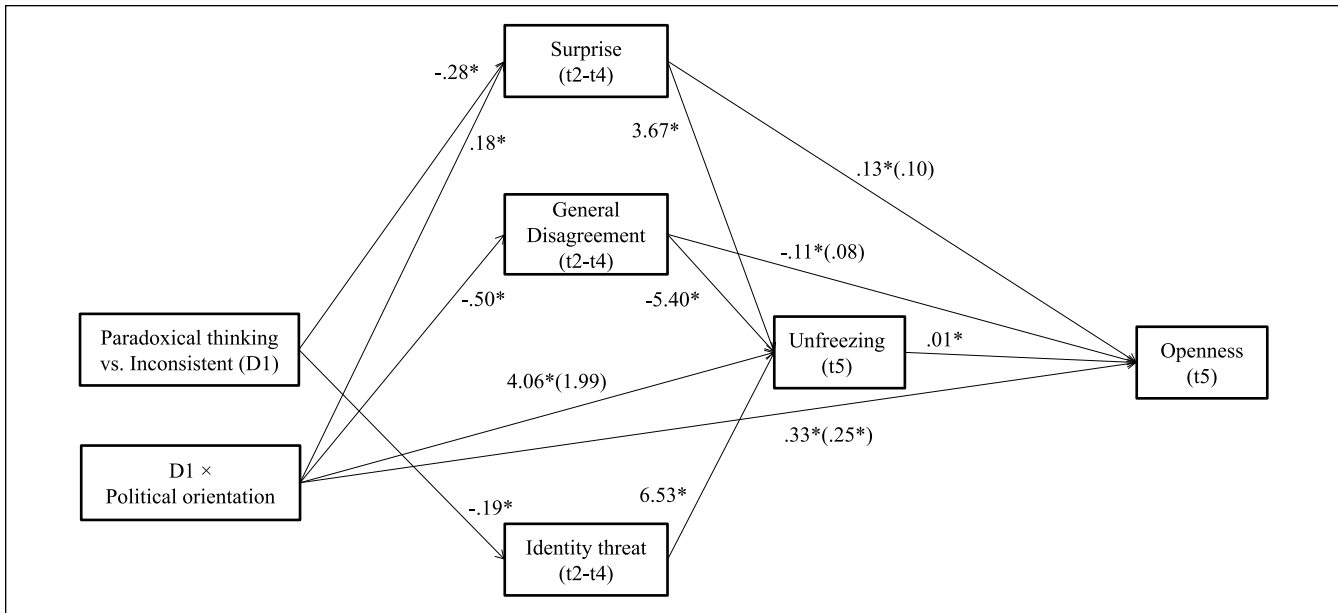


**Figure 6.** The interactive effect of the manipulation and political orientation on participants' openness to alternative information in Study 2.  
Note. Error bars represent SEs.

above, as well as their interaction terms with political orientation. Then, we tested two moderated mediation models for *D1* and *D2* separately (while controlling for age and gender, as well as the other dummy variable and its interaction with political orientation).

We first examined the model with *D1* as the independent variable, while we controlled for *D2* and *D2* interaction with political orientation (see Figure 7). Results indicated that the *D1* × Political Orientation interaction effect on unfreezing ( $b = 4.60$ ,  $SE = 1.75$ ,  $t = 2.63$ ,  $p = .009$ ; 95% CI = [1.16, 8.04]) was reduced after identity threat, surprise, and general disagreement were added to the model ( $b = 1.99$ ,  $SE = 1.64$ ,

$t = 1.21$ ,  $p = .226$ ; 95% CI = [−1.23, 5.21]). For identity threat, the interaction indirect effect was not significant ( $effect = -.78$ ,  $SE = 0.61$ , 95% CI = [−2.16, 0.30]). However, we did find a mediation effect between the *D1* comparison and unfreezing that was not moderated by political orientation ( $effect = -1.22$ ,  $SE = 0.71$ , 95% CI = [−2.82, −0.0002]). For surprise, the interaction indirect effect was significant ( $effect = .67$ ,  $SE = 0.36$ , 95% CI = [0.14, 1.58]), such that the indirect effect linking the condition to unfreezing via surprise was only significant for the rightist participants ( $effect = -1.87$ ,  $SE = 0.76$ , 95% CI = [−3.78, −0.69]) but not for the centrists ( $effect = -.22$ ,  $SE = 0.50$ , 95% CI = [−1.33, 0.70]).



**Figure 7.** Moderated serial mediation model of openness to alternative information in Study 2.

Note. Model shows the paradoxical thinking versus inconsistent conditions (*D1*) comparison, and its interactive effect with political orientation. The effects of political orientation, covariates, and nonsignificant paths are not shown.

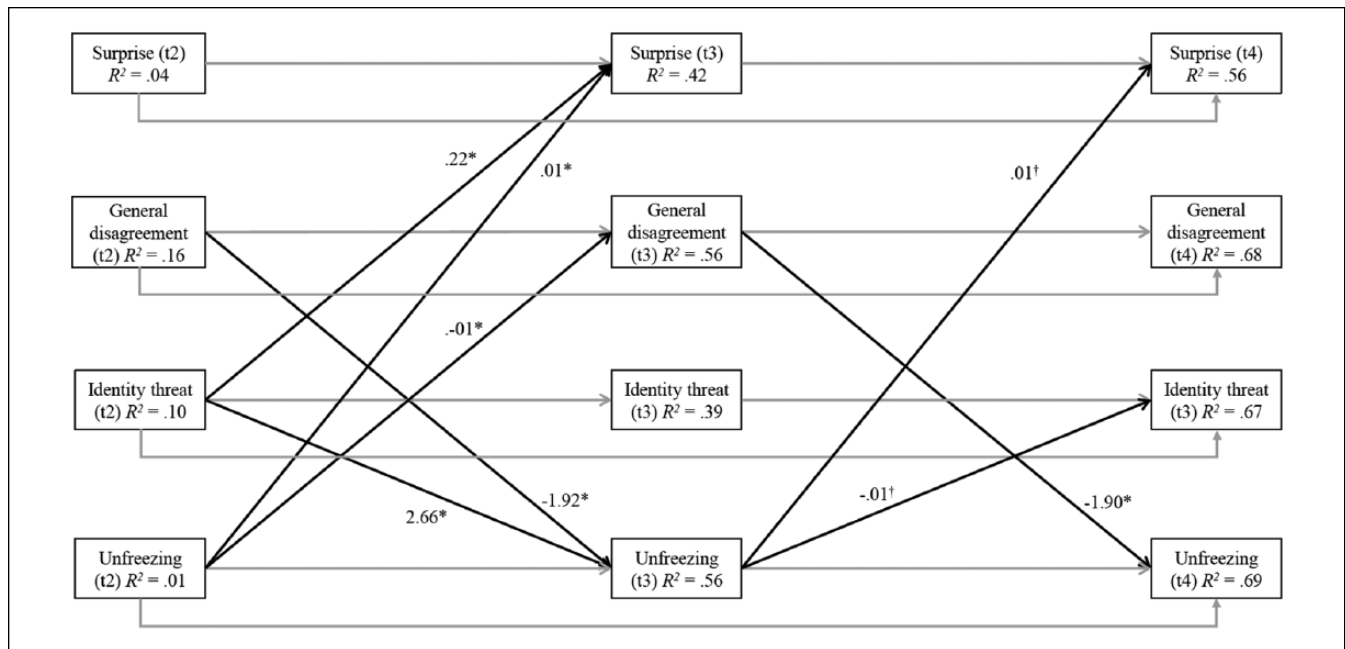
\* $p < .05$ .

For general disagreement, the interaction indirect effect was also significant ( $effect = 2.72$ ,  $SE = 0.66$ , 95% CI = [1.57, 4.19]), such that the indirect effect was transmitted through participants' general disagreement for both the rightist and centrist participants but reversed, as for rightists the effect was stronger in the paradoxical thinking condition ( $effect = -4.12$ ,  $SE = 1.17$ , 95% CI = [-6.73, -2.11]); whereas for the centrists, it was stronger in the inconsistent condition ( $effect = 2.59$ ,  $SE = 0.98$ , 95% CI = [0.86, 4.77]).

Next, given the fact that the main analysis detailed above did not yield a significant effect for the interaction between the *D2* comparison and political orientation on unfreezing, we did not expect to find a moderated mediation effect when we identified *D2* as the independent variable, and controlled for *D1* and its interaction with political orientation. Indeed, we found that the nonsignificant effect of the interaction between the *D2* comparison and political orientation on unfreezing ( $b = -.82$ ,  $SE = 1.91$ ,  $t = -.43$ ,  $p = .669$ ; 95% CI = [-4.57, 2.93]) remained nonsignificant after identity threat, surprise, and general disagreement were added to the model ( $b = .05$ ,  $SE = 1.75$ ,  $t = .03$ ,  $p = .976$ ; 95% CI = [-3.38, 3.49]). However, the analysis did indicate that the effect for the *D2* comparison slightly decreased when we introduced the three mediators to the model (from  $b = -9.24$ ,  $SE = 2.32$ ,  $t = -3.99$ ,  $p < .001$ ; 95% CI = [-13.80, -4.69] to  $b = -8.64$ ,  $SE = 2.28$ ,  $t = -3.78$ ,  $p < .001$ ; 95% CI = [-13.13, -4.15]), and that the three (not moderated) indirect effects were significant (identity threat:  $effect = -4.39$ ,  $SE = 0.90$ , 95% CI = [-6.41, -2.86]; surprise:  $effect = -1.49$ ,  $SE = 0.57$ , 95% CI = [-2.84, -0.58]; general disagreement:  $effect = 5.28$ ,  $SE = 1.08$ , 95% CI = [3.40, 7.66]).

Finally, to test whether levels of unfreezing mediated the hypothesized links between our psychological mechanisms, identity threat, surprise and general disagreement, and openness to alternative information, we used a series of three Hayes's (2013) PROCESS (Model 4) bootstrapping commands with 5,000 iteration analyses. Each analysis examined the indirect effect between one psychological mechanism and openness, through unfreezing, while controlling for the additional two other mechanisms (as well as for all other exogenous variables in the model, that is, political orientation, the two dummy variables, and their interactions with political orientation). The analyses showed that all three indirect effects between openness and identity threat ( $effect = .04$ ,  $SE = 0.02$ , 95% CI = [0.01, 0.10]), surprise ( $effect = .02$ ,  $SE = 0.01$ , 95% CI = [0.003, 0.06]), and general disagreement ( $effect = -.04$ ,  $SE = 0.02$ , 95% CI = [-0.08, -0.003]) through unfreezing were significant.

**Additional longitudinal analysis focusing on the rightist participants.** The main analysis (as well as previous research, see Hameiri, Porat, et al., 2014; Hameiri et al., 2016) indicated that the paradoxical thinking intervention was mostly effective with the more rightist participants—who tend to be more adamant in their opposition to peace, and resistant to peace promoting messages (see Hameiri, Bar-Tal, et al., 2014)—leading to more unfreezing and openness to alternative information. Thus, in the next stage we decided to examine the delicate interplay, or the possible interrelations between identity threat, surprise, and general disagreement across time only among rightist participants ( $n = 308$ ). Moreover, as we measured a single item of unfreezing in Waves 2 to 4, we



**Figure 8.** Cross-lagged panel model of the rightist participants in Study 2.

Note. Panel model showing autoregressive (in gray) and cross-lagged (in black) paths for rightist participants ( $n = 308$ ). Unstandardized coefficients are reported; only significant paths are shown. The model controls for the *D1* and *D2* comparisons, age, and gender.

† $p < .10$ . \* $p < .05$ .

were able to examine how these processes might affect and might be affected by participants' levels of unfreezing across time.

To do so, using structural equation modeling (SEM) with AMOS 21, we conducted a cross-lagged panel model (e.g., Little, 2013), which allowed us to examine the direction of observed effects, for example, whether high levels of identity threat following the first exposure to the manipulation predict unfreezing, or is it in the reverse direction while controlling for the effect of each variable on itself over time (i.e., autoregressive paths; for means, standard deviations, bivariate correlations, and reliabilities, see Table 1 in supplementary materials). For the identical analysis among the remaining participants (i.e., center-left participants,  $n = 186$ ), see supplementary materials.

We estimated a three-wave panel model regressing unfreezing on identity threat, surprise, and general disagreement and vice versa (see Figure 8; complete information about the model can be found in the supplementary materials). We controlled for the *D1* and *D2* comparisons as well as for age and gender, as we did in all our previous analysis. The model showed good fit to the data,  $\chi^2(5) = 6.77, p = .239, \chi^2/df = 1.35$ , comparative fit index (CFI) = 1.00, Tucker–Lewis index (TLI) = .98, root mean square error of approximation (RMSEA) = .03. All autoregressive paths were significant (all  $ps < .008$ ). First, consistent with the analyses above, both the *D1* and *D2* comparisons predicted identity threat ( $b = -.33, \beta = -.15, p = .016$ , and  $b = -.81, \beta = -.35, p < .001$ , respectively), surprise ( $b = -.34, \beta = -.14, p = .029$ , and  $b = -.38$ ,

$\beta = -.15, p = .020$ , respectively), and general disagreement ( $b = .44, \beta = .14, p = .018$ , and  $b = -1.00, \beta = -.31, p < .001$ , respectively) at t2, while they did not predict unfreezing at t2 ( $b = 3.88, \beta = .08, p = .222$ , and  $b = -1.46, \beta = -.03, p = .662$ , respectively). This means that for rightist participants, the paradoxical thinking condition led, after the first exposure to the videos, to higher levels of identity threat and surprise compared to both the inconsistent and control conditions, while it led to more disagreement compared to the control condition and *less* disagreement compared to the inconsistent condition. At the same time, the first exposure did not lead to significant changes in the single item assessing unfreezing.

Next, consistent with our hypotheses, general disagreement at t2 negatively predicted unfreezing at t3 ( $b = -1.92, \beta = -.13, p = .006$ ), while identity threat at t2 positively predicted unfreezing at t3 ( $b = 2.66, \beta = .13, p = .004$ ). Although levels of surprise at t2 did not predict unfreezing at t3, it was positively correlated with unfreezing at t2 ( $r = .19, p = .001$ ). Identity threat at t2 also predicted surprise at t3 ( $b = .22, \beta = .10, p < .001$ ). Interestingly, unfreezing at t2 positively predicted surprise at t3 ( $b = .01, \beta = .16, p < .001$ ) and negatively predicted disagreement at t3 ( $b = -.01, \beta = -.10, p = .019$ ), which negatively predicted unfreezing at t4 ( $b = -1.90, \beta = -.13, p = .009$ ). Finally, unfreezing at t3 again (marginally significantly) positively predicted surprise at t4 ( $b = .01, \beta = .11, p = .069$ ), but remarkably it also (marginally significantly) negatively predicted identity threat at t4 ( $b = -.01, \beta = -.10, p = .055$ ). All other cross-lagged effects were not significant.<sup>7</sup>

## Discussion

The results of Study 2 largely replicated and extended those obtained in Study 1. We found that for rightist participants, the paradoxical thinking intervention, "The Conflict," led to more unfreezing of held conflict-supporting beliefs and more openness to alternative information, compared to both the inconsistent and the control conditions. Furthermore, we generally found the reverse pattern of results for the centrist participants, such that the inconsistent campaign, "The Partners," led to more unfreezing and (although not statistically significant) openness to alternative information. Centrist participants also showed higher levels of unfreezing in the paradoxical thinking condition compared to the control, and similar levels in terms of openness to alternative information.

With regard to the hypothesized psychological mechanisms, as expected, the paradoxical thinking condition, compared to the inconsistent condition, led rightist participants to be more surprised and disagree less but at the same time sense a stronger threat to their identity. Contrary to our hypothesis, we did not find this to be moderated by political orientation, and thus centrist participants sensed similar levels of threat to their identity in the paradoxical thinking condition compared to rightist participants. We will discuss this unexpected finding in the general discussion. Furthermore, we found that these psychological mechanisms mediated the effect of the paradoxical thinking condition (compared to both the inconsistent and the control conditions) on unfreezing, especially with the rightist participants, which in turn led to more openness to alternative information.

Finally, when analyzing among rightist participants only the interplay across time between the three hypothesized mechanisms and the single item of unfreezing, we generally found that at the beginning identity threat led to more unfreezing, but then the more participants unfroze it led to *less* identity threat. General disagreement predicted lower levels of unfreezing across time, and surprise did not predict unfreezing across time but was positively correlated with unfreezing measured at the same wave (for t2 and t4). These results correspond to the overall pattern of additional longitudinal analysis for each of these variables we provide in the supplementary materials, in which, most notably, rightist participants in the paradoxical thinking condition show a decrease in identity threat across time, while they show an increase in unfreezing.

## General Discussion

The present research, in two studies, demonstrates that the conflict-resolution paradoxical thinking intervention is effective in leading to unfreezing of previously held conflict-supporting beliefs and openness to alternative information. Importantly, these effects were more prominent among the rightist participants who tend to be more adamant in their opposition to peace. The present research also shows

the mediating role of sense of identity threat, surprise, and general disagreement following the exposure to the paradoxical thinking messages. Finally, the results were generally replicated in two substantially different experimental paradigms; that is, a small-scale lab experiment and a large-scale, longitudinal field experiment, consisting of five waves of measurements. These different experimental designs examined two distinct types of paradoxical thinking interventions that were derived from the (mostly) clinical psychological literature reviewed, namely blatant and subtle exaggerations or amplifications of held beliefs (e.g., Frankl, 1975; Miller & Rollnick, 2002; Rescher, 2005; Swann et al., 1988; Watzlawick et al., 1974).

Specifically, consistent with past results (Hameiri, Porat, et al., 2014; Hameiri et al., 2016) both studies showed that a paradoxical thinking intervention, whether it is executed by using blatantly extreme leading questions or by the subtler approach of "The Conflict" campaign, led to more unfreezing of previously held conflict-supporting beliefs and more openness to conflict-related information among rightist participants. This was obtained when the intervention was compared to both an inconsistency-based approach to persuasion and a baseline control condition. Furthermore, the results showed that the inconsistency-based approach was not effective among the rightist participants in creating more unfreezing and openness. On the contrary, the studies also show that both the paradoxical thinking intervention and the inconsistency-based approach intervention were only moderately effective with the centrist participants when compared to a baseline control condition. While in the case of the paradoxical thinking intervention this was expected, as centrist participants tend to be less adherent to conflict-supporting beliefs; it was less expected with the inconsistency-based intervention. One reason for this limited effectiveness might be due to our skewed samples that included only a small number of leftist and extreme leftist participants. Still, the results call into question the effectiveness of the inconsistency-based approach as a means to intervene in the context of intractable conflicts, even among individuals who hold a centrist worldview (cf. Hameiri, Bar-Tal, et al., 2014).

The studies also showed, for the first time, the role identity threat, surprise, and general disagreement play as psychological mechanisms that lead to the paradoxical thinking effect. Specifically, in Study 1, we found that participants in the paradoxical thinking condition were more surprised, and that rightist participants in the paradoxical thinking condition (vs. the inconsistent condition) disagreed less. In Study 2, we replicated and extended these results, as we also found that the paradoxical thinking intervention led participants to sense more identity threat. Finally, in Study 2, we developed a comprehensive model in which identity threat, surprise, and general disagreement mediated the effect of the paradoxical thinking intervention on unfreezing of conflict-supporting beliefs, which in turn led to more openness to alternative information.

Our findings suggest that the paradoxical thinking manipulation surprised participants, and led to *less* disagreement with the message compared to other persuasive approaches. Thus, our results provide a more complex picture in contrast to Swann et al.'s (1988) study, which found that regardless of the condition, participants who were more certain in their conservative attitudes showed more general disagreement, and thus explained these results with self-verification processes (e.g., Swann, 1983). Nevertheless, we believe that paradoxical thinking messages lead to a different type of resistance to the messages, in Swann et al.'s (1988) terminology, rather than mere disagreement, as these messages may reflect negatively on the individuals' identities or threaten their identities. However, we suggest that this process leads to the desired effects only when individuals are also surprised by the messages, and do not strongly disagree with them or reject them, because only in this case they may go through longer and more thorough processing of the messages and the sense of identity threat (see Kahneman, 2011).

Indeed, the comprehensive model we developed in Study 2 showed the important role identity threat, surprise, and general disagreement play in the paradoxical thinking psychological process. However, to get insights into the delicate interplay across time between these three psychological mechanisms and their mutual influence vis-à-vis levels of unfreezing, we then developed a cross-lagged panel model among the rightist participants (as well as four mixed-linear models that are described in the supplementary materials). These analyses suggest that for the rightist participants, while the paradoxical thinking messages did not immediately lead to more unfreezing, it did lead them to sense threat to their identity. They immediately sensed that these messages pose a threat to the way they perceive themselves, their worldviews, and their group. However, only when this threat was coupled with a surprised reaction and low levels of general disagreement, as was the case with the more rightist participants in the paradoxical thinking condition, did it perhaps lead to an in-depth exploration of the paradoxical thinking messages and the *meaning* of this identity threat. This process may have led to the realization of the absurdity of their held beliefs or the current situation, manifested in the increase in unfreezing across time, which in turn led to a *decrease* in the sense of identity threat across time. On the contrary, when this sense of identity threat was not coupled with a sense of surprise and was accompanied by a stronger general disagreement, as was the case for the centrist participants in the paradoxical thinking condition, we argue that it was not processed thoroughly, yielding unchanged levels of identity threat and unfreezing throughout the second experiment.

Future research should examine and further develop this suggested psychological process, especially the order of the activation of these mechanisms. In addition, future research could establish the causal effect of identity threat on the effectiveness of the paradoxical thinking messages. An interesting way to test this would be by examining whether a

self-affirmation intervention (e.g., Cohen & Sherman, 2014) prior to the paradoxical thinking manipulation would eliminate identity threat and consequently the paradoxical thinking effect. Another interesting cognitive direction could be to test whether paradoxical thinking messages lead to a long and thorough thinking process (Kahneman, 2011), as suggested above, and whether this process will also lead to more thorough processing of information, more unfreezing, and more openness to information in other domains that were not targeted by the paradoxical thinking message (cf. Vasiljevic & Crisp, 2013).

It should be noted that, contrary to our hypothesis, we found in Study 2 that the paradoxical thinking intervention led to higher levels of identity threat compared to the inconsistent and control conditions to all participants, regardless of political orientation. Indeed, research indicates that the vast majority of Jewish-Israelis, including individuals from the political center, adhere to the conflict-supporting beliefs explicitly, and individuals from the left adhere to them implicitly (e.g., Bar-Tal, Halperin, & Oren, 2010; Sharvit, 2014). Thus, we did expect that the paradoxical thinking intervention, to a certain extent, would raise levels of identity threat for all participants. However, as rightist individuals tend to adhere to these beliefs more, we hypothesized that they would sense a stronger threat to their identity.

We argue that there are two possible explanations to this unexpected result: First, as the views of the radical right become increasingly institutionalized in Israel in the recent years (see, for example, Bar-Tal & Raviv, in press; Zonszein, 2016), it could be the case that the videos were also effective in leading centrists to sense identity threat. At the same time, the rightists did sense more threat to their identities but only to a limited extent (see Table 2), because for them the radical right and its beliefs are not as threatening today as they were perhaps a few years ago. Second, it could be the case that the items with which we measured identity threat did not fully capture all aspects of this construct. Specifically, the identity threat items we used assessed sensed threat in rather general terms, and did not include, for example, a threat to the participants' positive self-image or their ingroup's positive self-image. This means that the paradoxical thinking messages may have led to higher levels of identity threat, but this threat meant something somewhat different for the rightist and centrist participants that we were not able to discern with the items we used.

Another limitation that should be noted is that, albeit each study utilized a different sample (i.e., a student sample in Study 1 and an online sample in Study 2), both studies were conducted in the context of the Israeli–Palestinian conflict with Jewish-Israeli participants. Nevertheless, we argue that the basic principles of paradoxical thinking should be applicable to other contexts and other populations, as indicated by the literature reviewed above (e.g., Frankl, 1975; Miller & Rollnick, 2002; Swann et al., 1988). Still, future research should aim to extend the external validity of the paradoxical



thinking conceptual framework, and assess paradoxical thinking interventions in other intergroup conflicts and, for example, among low power groups, such as the Palestinians in the context of the Israeli–Palestinian conflict. Finally, another limitation that should be noted concerns the underpowered statistical analysis in Study 1. Hence, although we generally replicated the results in both studies, only in Study 2 were we able to test a comprehensive model to establish the mediational effect of our psychological mechanisms.

To conclude, we believe that the present research has important implications that are both theoretical and applied. In terms of theory, the present research advances our knowledge about the paradoxical thinking conceptual framework and presents the mediating role played by identity threat, surprise, and general disagreement as the psychological mechanisms that drive the previously established paradoxical thinking effect. In terms of the paradoxical thinking application in the context of an intractable conflict, the present research introduced a new paradoxical thinking intervention paradigm, based on Swann et al.'s (1988) leading questions approach. Furthermore, while the present research replicated previous studies and found that the paradoxical thinking intervention was effective with the rightist participants; it also showed that the inconsistency-based approach was completely ineffective with these participants, and had only limited success with the centrist participants. We hope that researchers and practitioners will take these important implications into considerations when designing future interventions in the crucial endeavor of mitigating intergroup conflicts all over the world.

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### Notes

1. Initially, we had a control condition in which participants were asked neutral open questions about the Israeli–Palestinian conflict (e.g., “Please specify events that show that the Palestinians

want to live with us in peace, and events that show that they do not”). This condition was omitted from the statistical analysis, as we realized that these open questions may have led participants to the realization that they do not have sufficient knowledge about the Israeli–Palestinian conflict, which would have motivated them to acquire knowledge (see Tormala & Rucker, 2007). For the analysis of the dependent variables that includes all conditions, see supplementary materials.

2. Participants sensed more threat to their identity in the inconsistent condition compared with the control. This effect tended to be stronger among the rightist participants than among the centrist participants.
3. There was no significant effect for the comparison between the inconsistent and control conditions, nor was there an effect of the interaction with political orientation, on levels of surprise.
4. Rightist participants showed significantly higher levels of disagreement in the inconsistent condition compared to the control, while centrist participants showed similar levels in the two conditions.
5. Rightist participants showed similar levels of unfreezing in the two conditions, while centrist participants in the inconsistent condition evidenced significantly higher levels of unfreezing compared to the control.
6. The comparison between the inconsistent and the control conditions was not significant, nor was the interaction with political orientation, in predicting openness to alternative information.
7. In the cross-lagged panel model with the center-left participants, unfreezing at t2 was predicted by the *D1* comparison, indicating that the paradoxical thinking intervention led to less unfreezing compared to the inconsistent condition. Unfreezing at t3 and t4 was only predicted by the autoregressive paths.

### Supplemental Material

Supplementary material is available online with this article.

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