ORIGINAL PAPER



Increased Support for Political Compromise in the Israeli-Palestinian Conflict Following an 8-Week Mindfulness Workshop

Alon Alkoby¹ • Eran Halperin¹ • Ricardo Tarrasch^{2,3} • Nava Levit-Binnun^{1,4}

Published online: 31 March 2017

© Springer Science+Business Media New York 2017

Abstract Mindfulness training has been shown to have a beneficial impact on emotions and perceptions. We examined whether it would reduce negative emotions and perceptions and lead to increased support for compromise in the context of prolonged intergroup conflict. We also examined the effect of an intervention that combines mindfulness with cognitive reappraisal, a method that enhances emotion regulation. Israeli students participated in a mindfulness course that either began in the winter semester (mindfulness group) or in the spring semester (control group). After the termination of the mindfulness course, all participants were invited to a laboratory session in which they were randomly assigned to either receive or not a short cognitive reappraisal training. The results showed that after being presented with anger-inducing information related to the Israeli-Palestinian conflict, participants in the mindfulness condition only, the reappraisal condition only or the combined group (mindfulness and reappraisal), were more supportive of conciliatory policies compared to participants that received no mindfulness nor reappraisal training. The increased support for conciliatory policies was mediated by a decrease in negative emotions in all groups, while in the mindfulness group, it was also mediated by reduction in

negative perceptions. The combined impact of mindfulness and reappraisal did not reveal any additional effect.

Keywords Mindfulness · MBSR · Emotion regulation · Perceived threat · Compromise · Conflict · Resolution · Reconciliation · Peace · Reappraisal

Introduction

Negative intergroup perceptions and emotions play a crucial role in fueling intergroup conflicts (Bar-Tal et al. 2007; Halperin et al. 2011; Horowitz 1985; Kelman 1998; Lindner 2006; Petersen 2002; Reifen-Tagar et al. 2011; Staub et al. 2005; Volkan 1997). For example, anger and hatred towards the out-group have been linked to the attribution of blame to the out-group (Small et al. 2006) and increased political intolerance (Halperin et al. 2009). Similarly, high levels of perceived threat from the out-group were found to be associated with support for exclusionary practices against minority groups (Semyonov et al. 2004) and support for aggressive retaliatory policies (Maoz and McCauley 2008).

Recent studies have demonstrated the benefits of various psychological interventions that explicitly or implicitly target discrete perceptions and emotions in reducing intergroup tensions and promoting reconciliation (e.g., Cohen-Chen et al. 2014; Halperin & Gross, 2011; Halperin et al. 2013; Halperin and Pliskin 2015 Lee et al. 2013, Shnabel et al. 2013; for a review see Čehajić-Clancy et al. 2016). For example, individuals trained to regulate emotions via cognitive reappraisal (one of the most commonly studied emotion regulation strategies, see Gross 2002) were able to effectively regulate their negative intergroup emotions even in response to the most violent intergroup developments. This led to a decrease in support for aggressive policies (e.g. Halperin



Nava Levit-Binnun navalb@idc.ac.il

Baruch Ivcher School of Psychology, Interdisciplinary Center (IDC), Herzliya, Israel

Division of Learning Disabilities, Constantiner School of Education, Tel Aviv University, Tel Aviv, Israel

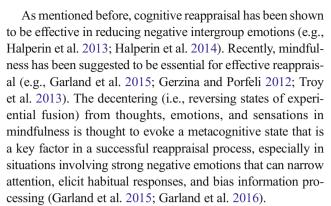
Sagol School for Neuroscience, Tel Aviv University, Tel Aviv, Israel

⁴ The Sagol Center for Brain and Mind, Interdisciplinary Center (IDC), Herzliya, Israel

et al. 2013; Halperin et al. 2014). The accumulation of studies indicating the beneficial effect of certain psychological interventions underscores the importance of furthering the search for effective interventions of this kind.

A growing body of scientific attention has been lately directed to the study of mindfulness, a psychological construct drawn from Buddhist traditions. Mindfulness is defined as the intentional, accepting and non-judgmental focus of one's attention on the emotions, thoughts and sensations occurring in the present moment (Kabat-Zinn 1994). This special quality of awareness is thought to reduce experiential fusion (when one becomes absorbed in the contents of consciousness, often leading to a reduced capacity to self-regulate) and bring greater awareness to the ways unconscious thoughts and feelings can undermine emotions and behaviors (Dahl et al. 2015; Roemer et al. 2015). Such insight, in addition to the ability to remain mindfully aware at all times, regardless of the valence or magnitude associated with the experienced emotion (Roemer et al. 2015), is believed to enable the development of more constructive attitudes towards one's situation, enhance emotional recovery (Teper et al. 2013), facilitate more adaptive responses (Roemer et al. 2015), foster insight into one's maladaptive patterns of interpreting experience (Bishop et al. 2004), and support cultivation of positive states of mind (Garland et al. 2015). Because transformations of emotions and perceptions are key elements in developing reconciliation in conflicts (Čehajić-Clancy et al., 2016; Shnabel and Nadler 2008), mindfulness interventions might serve as a useful tool for increasing reconciliation.

Indeed, empirical studies demonstrate the effectiveness of mindfulness interventions in the transformation of perceptions, biases, and emotions. In terms of emotions, studies have demonstrated the effectiveness of both brief (~10 min) and enduring (8 weeks) mindfulness training programs in decreasing negative emotions (Goldin & Gross, 2010; Goldin et al. 2013) and reducing negative responses to emotion-inducing stimuli (Broerick, 2005; Taylor et al. 2011) compared to control groups. Mindfulness practices have also been found to reduce implicit biases and prejudices. For example, mindfulness practice was found to reduce implicit prejudice towards persons with disability (Schimchowitsch and Rohmer 2016), improve moral reasoning and ethical decision-making (Shapiro et al. 2012), and decrease prejudicial beliefs towards ethnic and racial minorities (Lillis and Hayes 2007). Brief mindfulness intervention was demonstrated to implicitly reduce stereotypical thinking towards one's out-group (Tincher et al. 2016), lessen age and racial biases (Lueke and Gibson 2014), and reduce discrimination (Lueke and Gibson 2016). However, to date, despite these promising findings, no research has directly examined the effectiveness of mindfulness practices in downregulating negative intergroup emotions and shaping political perceptions in the context of intractable political conflicts.



Thus, the first goal of the present study was to test the hypothesis that cultivation of mindfulness through a generalpurpose mindfulness program (designed to promote stressreduction capabilities and well-being) would reduce intensive negative intergroup emotions and perceptions and increase conciliatory reactions to events related to prolonged intergroup conflict. A second goal of the current study was to examine the effects of an intervention that combines a standard 8-week mindfulness course with a short-training of cognitive reappraisal. As mindfulness is thought to support successful reappraisal processes (Garland et al. 2015; Garland et al. 2016), we tested the hypothesis that a combined mindfulness and cognitive reappraisal intervention, relative to cognitive reappraisal alone, would have greater effects on reducing both intensive negative intergroup emotions and perceptions and, increasing conciliatory reactions to conflict-related events.

Method

Participants

Participants were 101 Jewish-Israelis (59 female, 42 male; mean age = 26.57 years, SD = 5.67) who were enrolled in one of six mindfulness workshops that were offered at one of the universities in Israel. One of the mindfulness workshops was given as an elective course in an undergraduate psychology program. Participants in the other five mindfulness workshops were students and administrative faculty from the university recruited through advertisements that offered individuals the opportunity to participate in a mindfulness-based stress reduction (MBSR) workshop for a significant discount, in return for participation in a follow-up study. Upon signing up for the workshops, participants were allowed to choose joining the workshops that began in either November 2014 (two workshops) or March 2015 (three workshops), based on their time availability and schedule constraints. The participants who chose to take part in the two November workshops and the participants in the undergraduate elective course were assigned to the experimental group while those who signed up



for the three March workshops were assigned to the waiting-list control group (WL). Following screening for depression and post-traumatic stress disorder (see below), ten participants were excluded. Three additional participants ended up not completing the workshops. Of the 88 remaining participants (50 female, 38 male; mean age = 26.89 years, SD = 5.84), 36.4% indicated that they were rightists, 38.6% were leftists, and 25% were centrists (in the context of the Israeli-Palestinian conflict, the terms leftist and rightist are essentially synonymous with positive versus negative views about broad peace agreements calling for mutual compromise and requiring trust in the other side's willingness to abide by the terms of such agreements). All participants signed a consent form before the study began.

Procedure

Mindfulness Workshops

Mindfulness was cultivated by using the standard MBSR protocol developed by Kabat-Zinn (1990). The MBSR intervention consists of eight weekly 2.5-h sessions led by two skilled instructors, as well as a one full retreat day. In addition, participants were given guided meditation recordings and worksheets to support their home formal practice. The main skills taught in MBSR are body scan, sitting meditation, Hatha Yoga stretches and mindfulness in daily activities (mindful eating, walking, etc.). In this study, two of the experimentalgroup MBSR workshops followed this exact outline. The third workshop was embedded within an elective undergraduate course and was extended across 13 weekly 1.5-h sessions, as well as a one full-day retreat. The two instructors that led the workshops completed the professional teacher training program in MBSR provided by the Bangore University, UK, and had over 3 years of experience in teaching mindfulness courses. The teacher of the elective undergraduate MBSR course was one of the authors (NLB) whose identity as one of the study leaders was concealed during the study to avoid bias. Participants in the experimental groups attended most MBSR classes (M = 87.1% sessions, SD = 15.2, based on self-report) and completed a low to moderate amount of weekly hours of home practice (M = 69 min per week, SD = 56, based on self-report).

Cognitive Reappraisal Training

The short cognitive reappraisal (CR) training was similar to the one conducted in the study by Halperin et al. (2013). Briefly, the training lasted approximately 10 min. During the training, participants were shown negative emotion-inducing pictures and were asked by the experimenter to respond to them like scientists, objectively and analytically—to try to think about them in a cold and detached manner (see

Richards and Gross 2000). The experimenter modeled the use of cognitive reappraisal in response to the first two pictures, and then participants were asked to apply the technique to each of the four additional pictures. The experimenter ensured that participants applied the technique appropriately before continuing to the next stage of the experiment.

Experimental Design

Before the experimental group started, the MBSR workshop (time 1), all participants received via mail the consent form and a series of questionnaires they had to fill out (40 min in total). The questionnaires included items related to participants' demographics, political ideologies, out-group-attitudes, former mindfulness practice, emotion regulation tendencies, implicit beliefs, mindfulness trait levels, as well as additional questionnaires intended to camouflage the goals of the research (e.g., attachment questionnaire and ADHD symptom questionnaire). In the current paper, we report in detail only measures relevant to our hypotheses.

After the experimental group (MBSR group) completed the workshop (time 2), participants from both MBSR and WL groups were invited to the laboratory for a 45-min session. Following randomization into the reappraisal conditions groups, the MBSR+CR and WL+CR groups underwent a short reappraisal training (see above) while the MBSR and WL groups with no CR training viewed the same four pictures and were instructed to respond to them naturally.

After the training, all participants watched a 4-min angerinducing video, presenting the Israeli parliament member Ahmad Tibi, representing an Israeli- Palestinian political party, giving a harsh speech against the Israeli government's actions. Before watching the video, participants were asked to apply the technique they had learned earlier in order to regulate their emotions. On the basis of earlier pilot studies, we expected the video to induce high levels of anger towards Palestinians. After the presentation of the video, all participants were requested to fill out a battery of questionnaires about the negative emotions they experienced, the perceived threat they felt and their willingness to compromise on core issues in the Israeli-Palestinian conflict.

Measures

In order to capture conflict-related variables, we used measures that were previously used in the context of the Israeli-Palestinian conflict, with the Palestinians serving as the target out-group. Participants rated the different variables on a sixpoint scale.

Negative emotions targeted at Palestinians (based on Halperin et al. 2013) were rated using a four-item scale that asked the participants to indicate to what extent they experienced negative emotions towards Palestinian-Israelis ("hostility towards



1348 Mindfulness (2017) 8:1345–1353

Palestinian-Israelis;" "hate towards Palestinian-Israelis;" "anger towards Palestinian-Israelis;" "despair from the continuous conflict between Israelis and Palestinian-Israelis"). Responses to the items were averaged to create a single negative emotions score (Cronbach's $\alpha=.81$, in the present study).

Perceived threat from Palestinians was assessed by a fouritem scale often used in academic studies in Israel (e.g., Halperin et al. 2009). This scale is composed of various items capturing perceived potential threat from Palestinians in Israel ("Israeli Palestinians proved constantly that they are unreliable, and are able to turn their backs on Israel at any time"; "Israeli Palestinians were always a threat to the security of Israel;" "The primitive lifestyle of the Israeli Palestinians endangers Israeli culture;" "Palestinians living in Israel are a persisting threat to the existence of the State of Israel"). Participants were asked to indicate their level of support for these statements. Responses to these four items were averaged to create a single score of "perceived threat" ($\alpha = .83$).

Support for compromise towards the Palestinians (Halperin and Bar-Tal 2011) was assessed by asking participants to respond to three items, each representing a unique aspect of potential Israeli compromise regarding key political issues within the upcoming negotiations (territorial compromise, symbolic compromise on the status of Jerusalem, and compromise on the status of Palestinian refugees). Scores for the three items were averaged to create a single "support for compromise" score $(\alpha = .66)$.

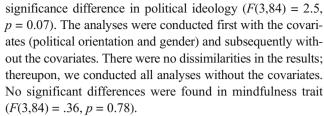
As additional control variables, participants indicated their level of religiosity (1 = secular, 2 = secular traditional, 3 = traditional, 4 = religious, 5 = ultra-orthodox), their political orientation (1 = extreme right to 7 = extreme left), and the party for which they voted in the last elections and mindfulness trait (MAAS, Brown and Ryan 2003, with an α = .84 in the present study). Participants also reported their gender, age, and average income.

Data Analyses

We first tested demographic variables and other relevant variables to examine differences between conditions. Then, we investigated the main effects and interactions of cognitive reappraisal and mindfulness on negative emotions, perceived threat, and support for compromise using factorial analyses. Lastly, to better understand the effects, we investigated the relations between the variables in several possible models using path analysis.

Results

The analysis of demographic and other relevant variables revealed a significant difference between the four groups in gender ($\chi^2(3) = 8.76$, p < 0.05) and an approaching



Three separate 2×2 factorial analyses of variance tested the effects of group (MBSR or WL) and the type of training (CR or natural respond) on negative emotions, perceived threat and support for compromise, while controlling for gender and political orientation.

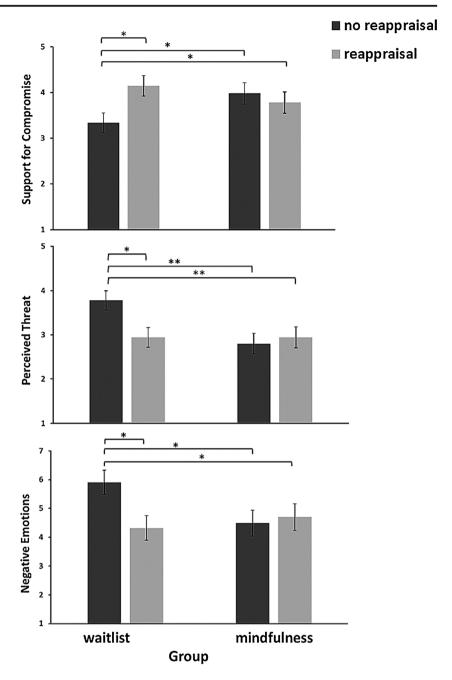
As hypothesized and presented in Fig. 1, a significant interaction was found on all three variables—negative emotions F(1,84) = 4.01, p = 0.048, perceived threat F(1,84) = 7.24, p = 0.009, and support for compromise F(1.84) = 4.89, p = 0.03. Post hoc comparisons (least significant difference—LSD) revealed that the only group that was significantly different from the others was the WL control group without any further CR training. Participants in the WL group revealed higher negative emotions (M = 5.94, SD = 2.4) compared to the MBSR (M = 4.5, SD = 1.99, p = 0.02), the WL + CR (M = 4.34, SD = 1.76, p = 0.03), and the MBSR + CR groups (M = 4.62, SD = 1.89, p = 0.009). Perceived threat was higher in the WL group (M = 3.95, SD = .87) compared to the MBSR (M = 2.67, SD = 1.18, p < 0.0001), the WL + CR (M = 3.1, p < 0.0001)SD = 1.19, p = 0.01), and the MBSR + CR groups (M = 2.77, SD = 1.17, p < 0.001). Lastly, support for compromise was almost significantly lower in the WL group (M = 3.2,SD = 1.06) compared to the MBSR (M = 3.93, SD = 1.31, p = 0.06), and the WL + CR groups (M = 3.88, SD = 1.3, p = 0.07), and significantly lower than the MBSR+CR groups (M = 4.24, SD = 1.36, p = 0.007). No significant differences between the three groups (MBSR, WL+CR and MBSR+CR) were obtained on the aforementioned variables. The extended data is included in Table 1.

In order to better understand the relation between the effects of mindfulness and reappraisal on support for compromise, negative emotions and perceived threat, we proposed a model in which the CR and MBSR are the independent variables, support for compromise is the outcome variable, and negative emotion and perceived threat served as potential mediators. Analyses were performed using SPSS AMOS 6. This a-priori model was found to fit the data well, $\chi^2(df = 6, N = 88) = 5.4, p = 0.49$, comparative fit index (CFI) = 1, root means square error of approximation (RMSEA) = 0.0). We also tested an additional alternative model where negative emotions lead to support for compromise without the mediating path of perceived threat. This model had a poorer fit $\chi^2(df = 6)$, N = 88) = 44.77, p < 0.01, CFI = .75, RMSEA = 0.27). Figure 2 displays the standardized path coefficients and statistical significance of the first model. The analysis



Mindfulness (2017) 8:1345–1353

Fig. 1 Post hoc comparisons of groups on negative emotions, perceived threat, and support for compromise. *Error bars* represent one standard deviation below and above the group mean



suggests that effects of MBSR and CR on people's willingness to engage in support for compromise are mediated by different mechanisms: MBSR effects are mediated both by change in perceived threat or by change in negative emotions, while CR effects are mediated only by change in negative emotions.

Discussion

In this study, we examined the effect of mindfulness practice on negative emotions and perceptions and on support for compromises in the context of one of the most violent conflicts worldwide—the Israeli-Palestinian conflict. We also examined the effects of a combined mindfulness and short cognitive reappraisal intervention on the same outcome variables.

As hypothesized, MBSR alone was more effective than no intervention (the WL control group with no further CR training) in reducing negative emotions, reducing perceived threat, and in increasing support for political compromises. These findings suggest that MBSR effects generalize to a wide range of stressful situations, moving beyond personal-life stress to difficult intergroup emotional situations induced by political conflicts. We suggest that this finding can be attributed to a



 Table 1
 Extended data of the post hoc comparisons

Measure	WL (1) N = 23	MBSR (2) N = 20	WL+CR (3) N = 23	MBSR+CR (4) $N = 22$	$ 1 \text{ vs } 2 \\ df = 41 $	$ 1 \text{ vs } 3 \\ df = 44 $	$ 1 \text{ vs } 4 \\ df = 43 $
Negative emotions	5.94 (2.4)	4.5 (1.99)	4.34 (1.76)	4.62 (1.89)	2.12, 0.02, 0.65	1.93, 0.03, 0.76	2.45, 0.009, 0.61
Perceived threat	3.95 (.87)	2.67 (1.18)	3.1 (1.19)	2.77 (1.17)	4.82, <0.001, 1.12	2.41, 0.01, 0.81	3.29, <0.001, 1.14
Support for compromise	3.2 (1.06)	3.93 (1.31)	3.88 (1.3)	4.24 (1.36)	1.58, 0.06, 0.61	1.50, 0.07, 0.57	2.56, 0.007, 0.85

Columns 2–5 present means and standard deviations (in parenthesis) of the four experimental groups. Columns 6–8 present LSD post hoc comparisons, comparing the WL group (1) against the MBSR (2), the WL+CR (3) and MBSR+CR (4) groups, and the respective Cohen's d. The *three numbers* appearing in each cell represent the *t* value, the *p* value and Cohen's d

"buffering effect" from immediate, automatic reactivity, and biases that is cultivated by mindfulness training (Feldman et al. 2010; Garland et al. 2009; Garland et al. 2015). Mindfulness is thought to evoke, through various cognitive and attentional mediators (Fletcher and Hayes 2005; Fresco et al. 2007; Teasdale et al. 2002; Shapiro et al. 2006), a metacognitive state that involves a shift in attention from the contents of consciousness to the process of consciousness itself (Garland et al. 2015). This enables a shift from automatic reactivity and biases, reduces intensity of distress, and facilitates more adaptive emotion regulation (Chambers et al. 2009; Hayes and Feldman 2004; Lutz et al. 2008; Roemer et al. 2015).

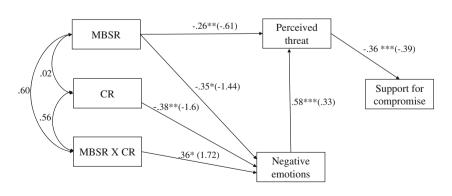
Comparison between the MBSR and the CR conditions allowed for a more thorough investigation as to the putative mechanisms at hand. Compared to no training, both CR and MBSR training were efficient in increasing support for compromise. However, different pathways mediated these effects. While both CR and MBSR influenced support for compromises through decreasing negative emotions, MBSR also increased support for compromise through directly influencing perceived threat.

This direct effect of mindfulness practice on perceived threat could be attributed to the direct cultivation of attention and awareness to one's mental state, which is central in mindfulness practice. Increasing awareness to one's mental states enables the fostering of insight into one's maladaptive interpretation of experience and modifies attentional habits (Bishop et al. 2004). Thus, similarly to the buffering effect from immediate automatic emotional reactivity, the metacognitive state evoked by mindfulness practice, enables a re-directing of one's focus of attention away from one's fixation and towards a different focus of attention (cognitive set shifting) (Garland et al. 2015) and a broader "psychological space" for greater perspective taking (Block-Lerner et al. 2007). It also minimizes the impact and influence of past experiences, associations, and memories on the present moment (Lueke and Gibson 2014).

Remarkably, participants who underwent CR training only were instructed explicitly to reduce emotions, while those in the MBSR condition were instructed to react naturally. The fact that the MBSR condition significantly reduced negative emotions, despite the absence of an explicit instruction to do so, suggests that already after the 8 week MBSR training participants have developed some automatic mechanisms of emotion regulation.

The second hypothesis of this study was that the combined MBSR+CR group would exhibit the strongest effects, as mindfulness has been suggested to assist reappraisal processes, especially in face of strong negative emotions (Garland et al. 2015; Gerzina and Porfeli 2012; Troy et al. 2013). However, our findings did not support this hypothesis. Indeed, several authors have proposed that mindfulness and reappraisal may be different and even opposite constructs

Fig. 2 Path analysis with estimates and statistical significance



* p < .05; ** p < .01; *** p < .001 χ 2/df = .54. CFI = 1.0. RMSEA = .00.



(e.g., Brewer et al. 2013; Chambers et al. 2009; see Roemer et al. 2015 for review). It is also possible that we did not find an increased effect for the combined intervention because of our experimental conditions. By explicitly requesting participants to reduce negative emotions via reappraisal, we may have inserted an external motivational factor that activated additional cognitive mechanisms and buffered the ancillary effects of mindfulness processes. Perhaps if, after training in CR, participants were not told explicitly to reduce emotions, we could have detected also the putative supporting effects of the mindfulness practice. Another possibility is that the mindfulness practice was not long enough in order to obtain the full effects of the practice, including the development of the metacognitive processes required to support reappraisal. Indeed, some scholars have noted that the length of practice may explain apparent ambiguous findings (Roemer et al. 2015). It has been suggested that when initially learned, more top-down, cognitive, regulatory processes are activated (Chiesa et al. 2013), while after extensive practice, the different response to emotions and beliefs may be more automatic. In our case, the participants were college students, mostly with only a moderate level motivation. Home practice was minimal $(69 \pm 56 \text{ min per week})$ compared with the length of practice required in an MBSR courses (>140 min of per week). Longer practice might bring about the supporting effects of mindfulness to the reappraisal process.

Our results raise the question why should one invest in an 8-week mindfulness workshop if a 10-minute reappraisal training produces similar effects in the context of intractable and violent political conflicts? We suggest that the answer to this question is a practical one. For one, to apply a regulation strategy, people must be motivated to regulate their emotions (e.g., Tamir 2009). Such motivation may vary across individuals (e.g., as a function of ideology) (Halperin et al. 2013). Secondly, MBSR programs and their adaptations are becoming increasingly popular across numerous fields and life domains, including healthcare, business, military, education, parent education, and government (Duncan and Bardacke 2010; Ferguson 2016; Goodman and Schorling 2012; Hyland 2016; Reb and Choi 2014; Zenner et al. 2014). A wide range of motivations attract people to these programs, including reduction of stress and burnout, increased cognitive and attention functioning, increased physical and mental resilience, reduced aging effects, and increased parenting abilities (e.g., Duncan and Bardacke 2010; Rejeski 2008; Shapiro et al. 1998). Taken together, we speculate that while individuals seek mindfulness practice for their personal and professional wellbeing, they are simultaneously cultivating a more conciliatory mind state. The implication of such speculation would be that if one wants to promote a more peaceful society, one should encourage individuals to undertake mindfulness-based practices for their personal wellbeing. Importantly, the findings relate to college students, who (based on self-reports) are very busy and sustain a very minimal and basic home practice. This encourages us to expect that in more dedicated populations the effects we found will be more pronounced. However, future studies should test whether our results generalize to non-student populations, other cultures and other political conflicts, and if the lack of differences between a short reappraisal training and a mindfulness workshop persist in the long term.

Future research should also directly assess whether changes in perspective taking and empathy are contributing factors to our observed effects of the mindfulness practice. Indeed, empathy was found to increase after an 8-week mindfulness course (Condon et al. 2013), and even after a 3-week mobileapp-based mindfulness training (Lim et al. 2015), while interventions (not mindfulness-based) focused on increasing perspective taking and empathy have been found to be effective in promoting reconciliation processes (see Cehajic-Clancy et al., 2016 for review). It would also be interesting to investigate whether our observed effects generalize to real-life political events and are sustained over a longer time-course. Nonetheless, this study showed that mindfulness practice can increase support for political compromises in an intractable intergroup conflict. These findings have implications for educational programs dedicated to promoting reconciliation between groups and suggest that the growing demand for mindfulness courses in a wide range of areas may in itself lead to beneficial communal outcomes.

Our study has several limitations. First, the number of participants for each group limits the ability to assess the effects of various characteristics of the participants relevant to political conflicts such as political orientation. The number of participants is limited by the nature of the intervention: each MBSR course is limited to 25 participants and for a large group of people to register and commit to future workshops (in order to serve as waiting-list controls), many workshops need to open simultaneously. Another limitation is the difficulty of randomizing participants between groups. Participants chose the course that best suited their timetables. The fact that one of the MBSR workshops (the elective course) was led by one of the authors may pose an additional limitation; however, we exerted maximal effort to reduce this limitation to a minimum. Firstly, this author was not involved in any way in participant recruitment, reappraisal training or in the data collection process. Secondly, all participants on all workshops received the same MBSR workshop booklet, which was followed closely by all instructors and implication to political conflicts was not mentioned whatsoever. Finally, the study was presented to the participants as part of the lab research of author EH (whio did not teach the elective course). Another limitation of our study is that it is restricted to a homogenous college-student population. This prevents us from generalizing our results to other populations. In addition, students were less dedicated participants, due to their busy schedules, and their practice was often minimal. Regarding



the different trainings, the comparison of MBSR with CR should be taken with a grain of salt, as the MBSR practice extends 8 weeks, while in our case CR was given as a brief 10-min practice. A more active control group is needed. Finally, given the small sample we had in each group (N = 20-24), we used LSD post hoc tests for the factorial analyses. A larger sample in each group could be useful in future studies in order to examine the effects with more conservative tests.

Acknowledgments We wish to thank Tamara Moshon, Alma Sifrim, and Eva Schonfeld for their assistance in data collection. This project was partially supported by the Mind & Life 1440 award and the Sagol Foundation.

Author Contributions AA designed and executed the study, assisted with the data analyses, and wrote the paper. EH collaborated with the design and writing of the study. RT analyzed the data and wrote part of the results. NLB collaborated with the design, assisted with data analyses and the writing of the study.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Funding This work has been partially funded by the Sagol Foundation and by the 1440 Mind & Life award.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

- Bar-Tal, D., Halperin, E., & De Rivera, J. (2007). Collective emotions in conflict situations: societal implications. *Journal of Social Issues*, 63(2), 441–460.
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: a proposed operational definition. *Clinical Psychology: Science and Practice*, 11(3), 230–241.
- Block-Lerner, J., Adair, C., Plumb, J. C., Rhatigan, D. L., & Orsillo, S. M. (2007). The case for mindfulness-based approaches in the cultivation of empathy: does nonjudgmental, present-moment awareness increase capacity for perspective-taking and empathic concern? *Journal of Marital and Family Therapy*, 33(4), 501–516.
- Brewer, J. A., Elwafi, H. M., & Davis, J. H. (2013). Craving to quit: Psychological models and neurobiological mechanisms of mindfulness training as treatment for addictions. *Psychology of Addictive Behaviors*, 27(2), 366.
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822.
- Čehajić-Clancy, S., Goldenberg, A., Gross, J. J., & Halperin, E. (2016). Social-psychological interventions for intergroup reconciliation: an emotion regulation perspective. *Psychological Inquiry*, 27(2), 73–88.

- Chambers, R., Gullone, E., & Allen, N. B. (2009). Mindful emotion regulation: an integrative review. *Clinical Psychology Review*, 29(6), 560–572.
- Chiesa, A., Serretti, A., & Jakobsen, J. C. (2013). Mindfulness: top–down or bottom–up emotion regulation strategy? *Clinical Psychology Review*, 33(1), 82–96.
- Cohen-Chen, S., Halperin, E., Crisp, R. J., & Gross, J. J. (2014). Hope in the middle east: Malleability beliefs, hope, and the willingness to compromise for peace. *Social Psychological and Personality Science*, 5(1), 67–75.
- Condon, P., Desbordes, G., Miller, W. B., & DeSteno, D. (2013). Meditation increases compassionate responses to suffering. *Psychological Science*, 24(10), 2125–2127.
- Dahl, C. J., Lutz, A., & Davidson, R. J. (2015). Reconstructing and deconstructing the self: cognitive mechanisms in meditation practice. *Trends in Cognitive Sciences*, 19(9), 515–523.
- Duncan, L. G., & Bardacke, N. (2010). Mindfulness-based childbirth and parenting education: promoting family mindfulness during the perinatal period. *Journal of Child and Family Studies*, 19(2), 190–202.
- Feldman, G., Greeson, J., & Senville, J. (2010). Differential effects of mindful breathing, progressive muscle relaxation, and lovingkindness meditation on decentering and negative reactions to repetitive thoughts. *Behaviour Research and Therapy*, 48(10), 1002–1011.
- Ferguson, M. L. (2016). Symposium: mindfulness and politics. New Political Science, 1–5.
- Fletcher, L., & Hayes, S. C. (2005). Relational frame theory, acceptance and commitment therapy, and a functional analytic definition of mindfulness. *Journal of rational-emotive and cognitive-behavior* therapy, 23(4), 315–336.
- Fresco, D. M., Segal, Z. V., Buis, T., & Kennedy, S. (2007). Relationship of posttreatment decentering and cognitive reactivity to relapse in major depression. *Journal of Consulting and Clinical Psychology*, 75(3), 447.
- Garland, E., Gaylord, S., & Park, J. (2009). The role of mindfulness in positive reappraisal. *Explore: The Journal of Science and Healing*, 5(1), 37–44.
- Garland, E. L., Hanley, A., Farb, N. A., & Froeliger, B. (2015). State mindfulness during meditation predicts enhanced cognitive reappraisal. *Mindfulness*, 6(2), 234–242.
- Garland, E. L., Kiken, L. G., Faurot, K., Palsson, O., & Gaylord, S. A. (2016). Upward spirals of mindfulness and reappraisal: testing the mindfulness-to-meaning theory with autoregressive latent trajectory modeling. *Cognitive Therapy and Research*, 1–12.
- Gerzina, H. A., & Porfeli, E. J. (2012). Mindfulness as a predictor of positive reappraisal and burnout in standardized patients. *Teaching* and *Learning in Medicine*, 24(4), 309–314.
- Goldin, P. R., & Gross, J. J. (2010). Effects of mindfulness-based stress reduction (MBSR) on emotion regulation in social anxiety disorder. *Emotion*, 10(1), 83.
- Goldin, P., Ziv, M., Jazaieri, H., Hahn, K., & Gross, J. J. (2013). MBSR vs aerobic exercise in social anxiety: fMRI of emotion regulation of negative self-beliefs. *Social Cognitive and Affective Neuroscience*, 8(1), 65–72.
- Goodman, M. J., & Schorling, J. B. (2012). A mindfulness course decreases burnout and improves well-being among healthcare providers. *The International Journal of Psychiatry in Medicine*, 43(2), 119–128.
- Gross, J. J. (2002). Emotion regulation: affective, cognitive, and social consequences. *Psychophysiology*, 39(3), 281–291.
- Halperin, E., & Bar-Tal, D. (2011). Socio-psychological barriers to peace making: an empirical examination within the Israeli Jewish society. *Journal of Peace Research*, 48(5), 637–651.
- Halperin, E., & Pliskin, R. (2015). Emotions and emotion regulation in intractable conflict: studying emotional processes within a unique context. *Political Psychology*, 36(S1), 119–150.



Halperin, E., Canetti-Nisim, D., & Hirsch-Hoefler, S. (2009). The central role of group-based hatred as an emotional antecedent of political intolerance: evidence from Israel. *Political Psychology*, 30(1), 93–123.

- Halperin, E., Sharvit, K., & Gross, J. J. (2011). Emotion and emotion regulation in intergroup conflict: an appraisal-based framework. Intergroup conflicts and their resolution: a social psychological perspective, 83–103.
- Halperin, E., Porat, R., Tamir, M., & Gross, J. J. (2013). Can emotion regulation change political attitudes in intractable conflicts? From the laboratory to the field. *Psychological Science*, 24(1), 106–111.
- Halperin, E., Cohen-Chen, S., & Goldenberg, A. (2014). Indirect emotion regulation in intractable conflicts: a new approach to conflict resolution. *European Review of Social Psychology*, 25(1), 1–31.
- Hayes, A. M., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. Clinical Psychology: Science and Practice, 11(3), 255–262.
- Horowitz, D. L. (1985). Ethnic groups in conflict. Univ of California Press.
- Hyland, T. (2016). Mindful nation UK-report by the mindfulness all-party parliamentary group (MAPPG). *Journal of Vocational Education & Training*, 68(1), 133–136.
- Kabat-Zinn, J. (1990). Full catastrophe living: using the wisdom of your body and mind to face stress, pain, and illness. New York: Dell Publishing.
- Kabat-Zinn, J. (1994). Wherever you go. There You Are: Mindfulness Meditation in Everyday Life.
- Kelman, H. C. (1998). Social-psychological contributions to peacemaking and peacebuilding in the middle east. Applied Psychology, 47(1), 5–28
- Lee, J. J., Sohn, Y., & Fowler, J. H. (2013). Emotion regulation as the foundation of political attitudes: does reappraisal decrease support for conservative policies? *PloS One*, 8(12), e83143.
- Lillis, J., & Hayes, S. C. (2007). Applying acceptance, mindfulness, and values to the reduction of prejudice: a pilot study. *Behavior Modification*, 31(4), 389–411.
- Lim, D., Condon, P., & DeSteno, D. (2015). Mindfulness and compassion: a examination of mechanism and scalability. *PloS One*, 10(2), e0118221
- Lindner, E. (2006). Making enemies: humiliation and international conflict. Greenwood Publishing Group.
- Lueke, A., & Gibson, B. (2014). Mindfulness meditation reduces implicit age and race bias the role of reduced automaticity of responding. Social Psychological and Personality Science, 1948550614559651.
- Lueke, A., & Gibson, B. (2016). Brief mindfulness meditation reduces discrimination. Psychology of consciousness. *Theory, Research, and Practice*, 3(1), 34.
- Lutz, A., Slagter, H. A., Dunne, J. D., & Davidson, R. J. (2008). Attention regulation and monitoring in meditation. *Trends in Cognitive Sciences*, 12(4), 163–169.
- Maoz, I., & McCauley, C. (2008). Threat, dehumanization, and support for retaliatory aggressive policies in asymmetric conflict. *Journal of Conflict Resolution*, 52(1), 93–116.
- Petersen, R. D. (2002). Understanding ethnic violence: fear, hatred, and resentment in twentieth-century Eastern Europe. Cambridge University Press.
- Reb, J., & Choi, E. (2014). Mindfulness in organizations.
- Rejeski, W. J. (2008). Mindfulness: Reconnecting the body and mind in geriatric medicine and gerontology. *The Gerontologist*, 48(2), 135– 141
- Reifen-Tagar, M. R., Federico, C. M., & Halperin, E. (2011). The positive effect of negative emotions in protracted conflict: the case of anger. *Journal of Experimental Social Psychology*, 47(1), 157–164.

- Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: the cognitive costs of keeping one s cool. *Journal of Personality and Social Psychology*, 79(3), 410.
- Roemer, L., Williston, S. K., & Rollins, L. G. (2015). Mindfulness and emotion regulation. *Current Opinion in Psychology*, 3, 52–57.
- Schimchowitsch, S., & Rohmer, O. (2016). Can we reduce our implicit prejudice toward persons with disability? The challenge of meditation. *International Journal of Disability, Development and Education*, 1–10.
- Semyonov, M., Raijman, R., Tov, A. Y., & Schmidt, P. (2004). Population size, perceived threat, and exclusion: a multiple-indicators analysis of attitudes toward foreigners in Germany. *Social Science Research*, 33(4), 681–701.
- Shapiro, S. L., Schwartz, G. E., & Bonner, G. (1998). Effects of mindfulness-based stress reduction on medical and premedical students. *Journal of behavioral medicine*, 21(6), 581–599.
- Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, 62(3), 373–386.
- Shapiro, S. L., Jazaieri, H., & Goldin, P. R. (2012). Mindfulness-based stress reduction effects on moral reasoning and decision making. *The Journal of Positive Psychology*, 7(6), 504–515.
- Shnabel, N., & Nadler, A. (2008). A needs-based model of reconciliation: satisfying the differential emotional needs of victim and perpetrator as a key to promoting reconciliation. *Journal of Personality and Social Psychology*, 94(1), 116.
- Shnabel, N., Halabi, S., & Noor, M. (2013). Overcoming competitive victimhood and facilitating forgiveness through re-categorization into a common victim or perpetrator identity. *Journal of Experimental Social Psychology*, 49(5), 867–877.
- Small, D. A., Lerner, J. S., & Fischhoff, B. (2006). Emotion priming and attributions for terrorism: Americans' reactions in a national field experiment. *Political Psychology*, 27(2), 289–298.
- Staub, E., Pearlman, L. A., Gubin, A., & Hagengimana, A. (2005). Healing, reconciliation, forgiving and the prevention of violence after genocide or mass killing: an intervention and its experimental evaluation in Rwanda. *Journal of Social and Clinical Psychology*, 24(3), 297.
- Tamir, M. (2009). What do people want to feel and why? Pleasure and utility in emotion regulation. *Current Directions in Psychological Science*, 18, 101–105.
- Taylor, V. A., Grant, J., Daneault, V., Scavone, G., Breton, E., Roffe-Vidal, S., et al. (2011). Impact of mindfulness on the neural responses to emotional pictures in experienced and beginner meditators. *NeuroImage*, 57(4), 1524–1533.
- Teasdale, J. D., Moore, R. G., Hayhurst, H., Pope, M., Williams, S., & Segal, Z. V. (2002). Metacognitive awareness and prevention of relapse in depression: empirical evidence. *Journal of Consulting and Clinical Psychology*, 70(2), 275.
- Teper, R., Segal, Z. V., & Inzlicht, M. (2013). Inside the mindful mind how mindfulness enhances emotion regulation through improvements in executive control. *Current Directions in Psychological Science*, 22(6), 449–454.
- Tincher, M. M., Lebois, L. A., & Barsalou, L. W. (2016). Mindful attention reduces linguistic intergroup bias. *Mindfulness*, 7(2), 349–360.
- Troy, A. S., Shallcross, A. J., Davis, T. S., & Mauss, I. B. (2013). History of mindfulness-based cognitive therapy is associated with increased cognitive reappraisal ability. *Mindfulness*, 4(3), 213–222.
- Volkan, V. (1997). Bloodlines. From ethnic pride to ethnic terrorism. New York: Farrar, Straus, & Giroux.
- Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools—a systematic review and meta-analysis. Frontiers in Psychology, 5, 603.

