

1 **Abstract**

2 Although hundreds of dialogue programs geared towards conflict resolution are offered
3 every year, there have been few scientific studies of their effectiveness. Across 2 studies
4 we examined the effect of controlled, dyadic interactions on attitudes towards the ‘other’
5 in members of groups involved in ideological conflict. Study 1 involved Mexican
6 immigrants and White Americans in Arizona, and Study 2 involved Israelis and
7 Palestinians in the Middle East. Cross-group dyads interacted via video and text in a
8 brief, structured, face-to-face exchange: one person was assigned to write about the
9 difficulties of life in their society (‘perspective-giving’), and the second person was
10 assigned to accurately summarize the statement of the first person (‘perspective-taking’).
11 Positive changes in attitudes toward the outgroup were greater for Mexican immigrants
12 and Palestinians after perspective-giving and for White Americans and Israelis after
13 perspective-taking. For Palestinians, perspective-giving to an Israeli effectively changed
14 attitudes towards Israelis, while a control condition in which they wrote an essay on the
15 same topic without interacting had no effect on attitudes, illustrating the critical role of
16 *being heard*. Thus, the effects of dialogue for conflict resolution depend on an interaction
17 between dialogue condition and participants’ group membership, which may reflect
18 power asymmetries.

19

20 **Keywords:**

21 **perspective-taking; perspective-giving; intergroup conflict; trust; empathy; bias;**

22 **Israeli; Palestinian; immigrant**

23

24

1 **Introduction**

2

3 The modern socio-political landscape is characterized by intergroup conflicts,
4 ranging from contentious but largely nonviolent conflicts within societies (Black and
5 White Americans, immigrants and non-immigrants in the U.S.) to violent and apparently
6 intractable conflicts between neighbors (Indians and Pakistanis, Bosnians and Serbs,
7 Israelis and Palestinians). One impediment to the resolution of these conflicts is the
8 uncompromising psychological biases that affect members of both sides of a conflict
9 (Bar-Tal, 2007; Ehrlinger et al., 2005; Krueger and Funder, 2004; Lilienfeld et al., 2009;
10 Nadler and Shnabel, 2008). Groups experience severe lapses in trust and failures in
11 empathy towards each other (Bruneau et al., 2012; Cikara et al., 2011; Nadler and
12 Liviatan, 2006; Tam et al., 2009); each group tends to see the other as motivated by self-
13 interest and ideology, unwilling to hear or recognize the truth (Pronin, 2007; Pronin et al.,
14 2004). The perception that the other side is unreasonable and closed-minded leads
15 individuals on each side to choose coercive actions, rather than co-operative negotiations
16 (Kennedy and Pronin, 2008). In an effort to surmount the psychological barriers that exist
17 between groups, a host of conflict resolution programs have emerged.

18

19 *Conflict resolution and ‘debiasing’ efforts: the Contact Hypothesis*

20 Many conflict resolution programs are informed by ‘Contact Theory’ (Allport,
21 1979). Contact Theory proposes that positive intergroup contact should decrease
22 stereotypes and increase positive attitudes towards an out-group, particularly if three key
23 conditions are met: 1. Both groups have equal status in the contact environment; 2. The

1 groups work towards a common goal; and 3. The intergroup contact is sanctioned by
2 some authority. Meta-analyses of conflict resolution and prejudice reduction programs
3 generally support this theory: intergroup contact is effective in reducing intergroup
4 hostility and negative stereotypes, especially when the three conditions are met
5 (Pettigrew and Tropp, 2006). One caveat, though, is that the positive effects of contact
6 are largely one-sided: while effective for members of a dominant group, intergroup
7 contact is generally ineffective for members of the non-dominant group (e.g. Black
8 versus White Americans (Tropp and Pettigrew, 2005)).

9

10 *Perspective-taking.*

11 A second theme common to conflict resolution programs is perspective-taking.
12 Perspective-taking activities generally ask participants to ‘step in the shoes’ of a
13 representative member of a different group in order to induce empathy for that outgroup
14 as a whole. The effects of perspective-taking have been examined in controlled
15 experimental settings. For example, participants have been asked to transport themselves
16 in a wheelchair or shadow a wheelchair-bound person for a day (Clore and Jeffery, 1972),
17 or to write about a ‘day in the life’ of an elderly man (Galinsky and Ku, 2004; Galinsky
18 and Moskowitz, 2000), or to watch or listen to recorded accounts of women with AIDS,
19 the homeless, racial minorities and even convicted murderers (Batson et al., 1997;
20 Dovidio et al., 2004; Galinsky and Moskowitz, 2000; Vescio et al., 2003). Each of these
21 activities can lead to improvements in attitudes towards the target group.

22 Controlled studies of perspective-taking usually focus on marginalized or
23 stigmatized groups, rather than groups with whom the participants are involved in active

1 conflict; some authors have expressed doubts about whether perspective-taking could
2 work in the context of active ethnic conflict (Batson and Ahmad, 2009). In fact,
3 perspective-taking sometimes has the opposite, ironic, effect: White Canadians who
4 anticipated being blamed for the plight of Native Canadians responded negatively to
5 perspective-taking while watching a documentary about the difficulties faced by a Native
6 Canadian woman, resulting in more negative attitudes towards First Nations people
7 (Vorauer and Sasaki, 2009), and the positive effects of a radio soap opera depicting
8 conciliatory behaviors between different ethnic groups in the Democratic Republic of
9 Congo were eliminated when participants were also exposed to the other sides' views in a
10 radio talk show (Paluck, 2010).

11 Another limitation of most studies of perspective-taking is that they are
12 asymmetric: people from an empowered or majority group are asked to take the
13 perspective of a stigmatized or minority group member, but not vice versa. By contrast,
14 this type of activity is commonly conducted symmetrically in conflict resolution
15 programs that emphasize group parity in the program environment (i.e. members of both
16 groups engage in the same activities). In spite of this common practice, theoretical
17 considerations suggest that perspective-taking might not be equally beneficial, in both
18 directions across a power divide. There are at least three reasons that dominant group
19 members could benefit from perspective-taking which would not apply to stigmatized or
20 minority groups. First, spontaneous levels of perspective-taking are lower for individuals
21 with more power, so instructing those individuals to take the other's perspective may
22 provide novel information (Galinsky et al., 2006). If members of disempowered groups
23 are more likely to be already perspective-taking, then explicitly instructing them to do so

1 in an intervention would have less effect. Second, dominant group members have a need
2 to be perceived as moral, by themselves and others (Shnabel et al., 2009). Playing the
3 role of the virtuous, tolerant and sympathetic listener could fulfill this need (especially if
4 not threatened by expectations of blame (Vorauer and Sasaki, 2009)). Third, one
5 proposed mechanism by which perspective-taking improves attitudes is through self-
6 other merging (Davis et al., 1996; Galinsky et al., 2005). However, self-other merging
7 may actually be threatening and aversive to members of disempowered groups who are
8 strongly identified with their group. Thus, members of non-dominant groups (e.g.
9 Palestinians) often react especially negatively when asked to consider the perspective of
10 the dominant group (e.g. Israelis) (Bruneau and Saxe, 2010; Sagy et al., 2002). For these
11 reasons, asking members of a non-dominant group to take the perspective of members of
12 the dominant group could have no benefit, or even result in more negative attitudes
13 towards the dominant outgroup.

14 In sum, in the context of real ideological conflict, the effectiveness of perspective-
15 taking for improving intergroup attitudes has not been empirically tested, especially for
16 participants from the non-dominant/disempowered group. One goal of the present study
17 was to do just this: within the context of two conflicts that differed over a number of
18 dimensions, we sought to determine the effectiveness of perspective-taking for members
19 of the empowered and disempowered groups. Based on prior successes of perspective-
20 taking towards stigmatized groups, we were cautiously optimistic that encouraging
21 participants to engage in a particularly virtuous form of perspective-taking (actively
22 listening to an opposing viewpoint) would be beneficial for members of the empowered
23 group in a conflict. On the other hand, we hypothesized that perspective-taking would not

1 benefit members of disempowered groups. But if perspective-taking and intergroup
2 contact both fail to improve attitudes of non-dominant group members towards the
3 dominant group, what could provide an effective intervention for the disempowered?

4

5 *'Perspective-giving'*

6 To date, few studies have investigated how members of non-dominant groups
7 respond to interventions aimed at inter-group reconciliation or conflict resolution; when
8 examined, attitudes of non-dominant group members have proven resistant to positive
9 change (Cole et al., 2003; Tropp and Pettigrew, 2005). In our view, a key psychological
10 difference between dominant and non-dominant groups that must be addressed by
11 effective interventions is that the latter often feel disempowered, objectified and voiceless
12 (Said, 1978; Shnabel and Nadler, 2008). Qualitative interviews conducted after inter-
13 group dialogue programs support this view, and suggest that members of non-dominant
14 groups may benefit from exercising their voices: Arab Israelis express a specific need to
15 share their perspectives, and be listened to, by Jewish Israelis in these encounters,
16 whereas Jewish Israelis do not express this desire (Halabi, 2004). If so, an effective way
17 to address this need would be to provide a chance for members of the disempowered
18 group to speak to an individual from the dominant group, and (critically) feel 'heard'.
19 Since this activity is the complement of perspective-taking, we call it "perspective-
20 giving."

21 Although self-expression is part of the intuitive repertoire of many dialogue-based
22 conflict resolution programs, the effect of 'feeling heard' on intergroup attitudes has not
23 previously been investigated empirically. We hypothesized that 'perspective giving' is

1 actually an important mechanism of the success of these programs, especially for
2 individuals from non-dominant groups. That is, considering a needs-based model of
3 reconciliation (Shnabel et al., 2009), ‘perspective-giving’ would be well tailored to the
4 needs of members of disempowered and non-dominant groups, whereas ‘perspective-
5 taking’ would be better tailored to the needs of dominant group members.

6

7 *Present research*

8 The current study aimed to examine, in a controlled experimental setting, the
9 conditions under which a brief dialogue-based intervention could improve inter-group
10 attitudes, in individuals from groups involved in active and asymmetric conflict.
11 Specifically, we sought to test 1) a novel method for inducing ‘perspective-taking’ in an
12 experimental context, 2) a novel experimental intervention, which we termed
13 ‘perspective-giving’, and 3) how the effects of these interventions depend on group
14 membership.

15 In two studies, we implemented ‘perspective-taking’ and ‘perspective-giving’ as
16 assigned roles in a brief structured dyadic interaction, via a video and text-based ‘chat’
17 interface, with a member of the other group. Participants were assigned either to the role
18 of Sender (i.e. perspective-giving) or Responder (i.e. perspective-taking) (the interaction
19 partner was always a confederate from the other group). The Sender wrote a brief
20 description of the difficulties and challenges experienced by members of their group, and
21 the Responder then sent back a summary of the Sender’s statement, in their own words,
22 without expressing their own evaluations, beliefs or experiences. Describing the
23 difficulties and challenges experienced by the outgroup in one’s own words is a novel

1 and robust implementation of “perspective-taking”, requiring the Responder to at least
2 partially get ‘inside’ the Sender’s description. On the other hand, reading the Responder’s
3 restatement provides the Sender with an experience of “being heard” by the Responder.

4 The studies took place in two regions currently dealing with active intergroup
5 conflict. Study 1 took place in Phoenix, Arizona 6 months after the passage of the
6 controversial anti-immigration bill, SB1070. At the time of passage, over 70% of White
7 Arizonans supported the bill and over 70% of Hispanic Americans opposed it (Hanson,
8 2010). Study 2 took place in the Middle East 2 ½ years after the end of the 2nd Intifada
9 (Palestinian uprising) and 6 months after the Israeli invasion of Gaza, when intergroup
10 tension was very high and hope for an Israeli-Palestinian peace agreement was very low
11 (Telhami, 2009).

12 Across these two different conflicts, we predicted that members of the dominant
13 group would benefit from perspective-taking, resulting in a positive change in attitudes
14 towards the non-dominant group, while members of the non-dominant group would not
15 benefit from perspective-taking. On the other hand, we predicted that members of
16 disempowered groups would respond more positively to “perspective-giving” (expressing
17 oneself and being heard). Here we report two randomized controlled quantitative
18 evaluations of these hypotheses.

19

20 **Study 1**

21 Study 1 tested the effect of perspective-taking and perspective-giving on attitudes of
22 White Americans and Mexican immigrants towards the other group. The prediction for
23 this study was that the effectiveness of the interaction (operationalized as positive attitude

1 change towards the outgroup) would depend upon group membership: perspective-taking
2 would be more effective than perspective-giving for the dominant group (White
3 Americans), and perspective-giving would be more effective than perspective-taking for
4 the non-dominant group (Mexican immigrants).

5

6 **Methods**

7 *Participants*

8 White Americans (n = 47 (22 f), mean age 33 ± 9 s.d.) and Mexican immigrants (n = 76
9 (43 f), mean age 33 ± 11 s.d.) in Phoenix, Arizona were recruited for a study on “the
10 effectiveness of online translation tools at fostering communication between people who
11 speak different languages”. Participants were recruited using flyers posted at a
12 community group that serves Mexican immigrants (recruiting native Spanish speakers)
13 and on Craigslist (recruiting native English speakers). No one was turned away from the
14 study: Spanish-speaking Caucasian participants showed up for the study at the site for
15 Mexican immigrants, and native English-speaking non-Caucasian participants showed up
16 for the study at the site for White participants. Every individual who responded to the
17 recruitment participated in the study and was paid, but only data from Mexican
18 immigrant Spanish-speaking participants and Caucasian American English-speaking
19 participants were used for the analysis. The final samples included forty-seven White
20 American and seventy-six Mexican immigrant participants, who were randomly assigned
21 to one of two groups: 1. Sender (perspective-giving) or 2. Responder (perspective-
22 taking).

1 The Mexican immigrants in the study included first-generation immigrants (~2/3
2 of the participants) and second-generation children of immigrants (~1/3 of the
3 participants); a large majority of the immigrants were undocumented (more specific
4 descriptive statistics about documentation were not collected due to the delicate nature of
5 the issue). Written literacy, even in Spanish, was very poor for the population as a whole,
6 particularly for the older (first-generation) participants; median education level was
7 ‘Some High School’. When necessary, the research assistant took dictation from the
8 participants. None of the Mexican immigrant participants had ever taken a course in
9 experimental psychology, nor had they ever participated in a research study. The White
10 participants had more education (median education was ‘Some College’) and all were
11 fluent in written English, and computer-literate. All participants were paid \$20 US for
12 participating in the study.

13

14 *Procedure*

15 Caucasian American participants arrived to the research site at the Phoenix Public
16 Library and Mexican immigrant participants arrived to the research site at the community
17 group (Neighborhood Ministries) campus; all participants filled out a consent form, and
18 were then briefed on the experiment by the investigator. The study was described as
19 follows: “When information is translated from one language into another, the message is
20 often distorted. But people are often able to see through surface changes and get the
21 ‘general idea’ behind the message, even if the translation is not exact. In the present study
22 we are trying to see if an online translator can be used to allow people who speak
23 different languages to communicate effectively with each other about social issues.

1 During the study, you will also be answering some survey questions as part of an ongoing
2 program aimed at comparing general attitudes and beliefs across different cultural and
3 ethnic groups. If you volunteer to participate in this study, we will ask you to do the
4 following things:

5 Study #1 (communication across a language divide):

6 You will be asked to write your thoughts on an issue in English, and read someone else's
7 thoughts on the issue written in their native language and then translated into English.

8 Study #2 (attitudes and beliefs survey):

9 During this experiment you will indicate your opinion on a series of questions about your
10 beliefs, values and attitudes. The questions will be asked in two sections, one at the
11 beginning of the study, and one at the end.”

12 The questionnaires and the interaction used different fonts and layouts, to encourage
13 perception of the ‘studies’ as unrelated.

14 Participants were then directed to a laptop computer to begin the experiment. A
15 research assistant fluent in English (for Caucasians) or Spanish (for Mexican immigrants)
16 was on-hand to answer any questions and to help with reading and writing for low-
17 literacy participants. When not answering a question, the assistant remained far enough
18 away so that he/she could not see the computer screen.

19

20 *Measures.*

21 Each version of the questionnaire included the same dependent measures designed
22 to survey general attitudes towards out-group members across 4 dimensions: general
23 attitudes (2 items), perceptions of outgroup bias (4) (adapted from (Ehrlinger et al.,

1 2005)), empathy (2), and warmth (1). The outgroup version of each of the dependent
2 measures below were used:

- 3 1. (Attitude) Mexican immigrants/White Americans are generally ignorant and
4 selfish. (reverse scored)
5
- 6 2. (Attitude) Mexican immigrants/White Americans are generally thoughtful and
7 honest.
8
- 9 3. (Perception of Outgroup Bias) When forming their opinions about U.S.
10 immigration law, the average Mexican immigrant/White American is motivated
11 by self-interest. (reverse scored)
12
- 13 4. (Perception of Outgroup Bias) When forming their opinions about U.S.
14 immigration law, the average Mexican immigrant/White American is motivated
15 by a biased perspective on the issues. (reverse scored)
16
- 17 5. (Perception of Outgroup Bias) When forming their opinions about U.S.
18 immigration law, the average Mexican immigrant/White American is motivated
19 by careful consideration of the facts.
20
- 21 6. (Perception of Outgroup Bias) When forming their opinions about U.S.
22 immigration law, the average Mexican immigrant/White American is motivated
23 by logical analysis of costs and benefits.
24
- 25 7. (Empathy) The suffering of Mexican immigrants/White Americans is something
26 that really concerns me.
27
- 28 8. (Empathy) If I saw an illegal immigrant/White American grieving over a lost
29 family member, I would think about myself in that situation.
30
- 31 9. (Warmth) Indicate how warm or cold you feel towards Mexican
32 immigrants/White Americans.
33

34 All of the measures ($\alpha = 0.6$) were averaged within each dimension, and a single
35 ‘attitudes towards the outgroup’ score was obtained by averaging scores across all
36 dimensions. The nine dependent measures were embedded among 50 fillers (e.g.
37 questions on trait empathy and morality) and presented as a computer-based
38 questionnaire written in the participants’ native language; each question was answered

1 using a continuous slider (e.g. from “completely agree” to “completely disagree”,
2 converted to a 100 point scale). The filler questions included all items from 2 personality
3 measures: the Moral Foundation Questionnaire (MFQ) (Graham et al., 2009) and the
4 Social Dominance Orientation (SDO₅) scale (Pratto and Sidanius, 1996), as well as
5 questions about other groups (e.g. a feeling thermometer about Arabs). In all, participants
6 answered 56 questions per questionnaire, 34 of which were repeated in both
7 questionnaires: 9 dependent measures, 10 items from the MFQ, 4 items from the SDO
8 scale, and 11 questions about other groups (e.g. Arabs, African Americans). As a control
9 measure, a single “attitude towards Arabs” measure was created by averaging across 4
10 items relating to Arabs: warmth (1 item), perceptions of outgroup bias (2 items), and
11 general attitudes (1 item).

12

13 *Part I: Questionnaire:*

14 The initial questionnaire began with questions measuring gender, age, political, social
15 and religious conservatism (each separately answered on 9-point Likert scales anchored
16 at ‘very liberal’ and ‘very conservative’), and religious and ethnic identities. Participants
17 were then presented with the first questionnaire (9 dependent measures, control items
18 assessing attitudes towards Arabs, and filler items). Question order was randomized for
19 each participant. All questions were answered using a continuous slider, so participants
20 could not recall exact responses to repeated questions across the questionnaires.

21

22 *Part II: Interaction.*

23 Following the first questionnaire, participants were given written instructions for

1 the second part of the study: a dyadic interaction in which each person plays the role of
2 either a Sender ('perspective-giving' condition) or a Responder ('perspective-taking'
3 condition). Participants read full descriptions of the roles that each person would play (for
4 full text of these instructions, see Supplementary Materials), summarized as follows: the
5 Sender would "write on one or two of the most difficult problems or greatest barriers
6 facing people from your ethnic group in this country", and send this short essay to the
7 Responder. The Responder would translate the Sender's essay using Google Translate,
8 and write a summary of the translated essay in their own words (without revealing their
9 own thoughts, beliefs or evaluation), and send it back to the Sender, where it would again
10 be translated. Afterwards, participants would assess the effectiveness of the online
11 translation tool (consistent with the experimental cover story).

12 Participants were then informed of the role they were assigned (either Sender or
13 Responder), and of the identity of their interaction partner (an English-speaking White
14 American for all Spanish-speaking Mexican immigrant participants, and vice versa).
15 Interactions were conducted over a live video interface (Skype); audio was disabled and
16 all communication was conducted through a text chat window. The whole interaction
17 lasted 20 to 30 minutes. For both the Sending and Responding participants, the outgroup
18 interaction partner was actually an outgroup (White American or Hispanic) confederate
19 of the study who had training in the task; confederates in the Sending condition wrote
20 from standard scripts, constructed from the essays written by the first 5 participants from
21 each group in the Sending condition, and then balanced for length and tone (for the full
22 text of the confederate scripts, see Supplementary Materials).

23

1 *Part III: Questionnaire*

2 Immediately after the interaction, participants completed a second questionnaire, which
3 included the same dependent measures, the same control items assessing attitudes
4 towards Arabs, and filler items (half repeated from the first questionnaire and half novel).
5 Question order was randomized. In order to decrease suspicion of repeating items,
6 participants were told that the questions on each questionnaire were being chosen at
7 random by the computer from a large bank of questions; therefore some of the questions
8 they saw in the second questionnaire would be similar to those they had seen previously,
9 some would be the same, and some would be different. After the questionnaire,
10 participants were paid and debriefed. No participant expressed suspicion that the
11 interaction and questionnaire were related or part of a single study, or concern about the
12 repetition of some items in the first and second questionnaire. Demand characteristics
13 therefore were unlikely to be accountable for the observed effects.

14

15 **Results**

16 As we predicted, the effects of these brief interactions were asymmetric (Table 1).
17 For Mexican Immigrants, there was more positive change in the Sender than the Receiver
18 condition for all but one of the items (8/9 items, sign test, two-tailed $p < 0.05$); on the other
19 hand, for White Americans there was more positive change in the Responder than the
20 Sender condition for all but one of the items (8/9 items, sign test, two-tailed $p < 0.05$).

21 For White Americans both conditions were generally effective, but perspective-
22 taking (Responder condition) produced more positive changes in attitudes towards
23 Mexican immigrants. Perspective-taking resulted in positive attitude change in 79% of

1 participants (mean change = 6.8 ± 1.4 (sem) on a 100-point scale; one-sample t-test, $t(23)$
2 = 5.1, $p < 0.001$), while perspective-giving resulted in positive attitude change in 70% of
3 participants (mean change = 2.9 ± 1.2 (sem); one-sample t-test, $t(22) = 2.5$, $p < 0.05$). On
4 average, perspective-taking produced a larger positive change in attitudes than
5 perspective-giving for White Americans (independent-samples t-test, unequal variance,
6 $t(44.3) = 2.2$, $p < 0.05$).

7 By contrast, for Mexican immigrants the perspective-giving condition was more
8 effective, resulting in overall positive attitude change in 63% of participants (mean
9 change = 1.5 ± 1.9 (sem); $t(34) = 0.8$, $p = 0.44$), while the perspective-taking condition
10 resulted in positive attitude change in only 37% of participants (mean change = -4.2 ± 1.5
11 (sem); $t(40) = -5.1$, $p < 0.001$). Thus perspective-giving was more effective than
12 perspective-taking (independent-samples t-test, $t(68.6) = 2.2$, $p < 0.05$). The efficacy of
13 the perspective-giving versus perspective-taking intervention showed a significant
14 interaction with the participant's group membership (between-subjects ANOVA,
15 $F(1,119) = 7.4$, $p < 0.01$, Figure 2).

16 Attitudes towards a control group (Arabs) did not change significantly for either
17 condition in either group (no main effects or interactions, in a mixed ANOVA of pre-
18 versus post- intervention survey, interaction-type and group, all $p > 0.15$). Self-reported
19 anxiety levels assessed immediately after the interaction were similar across conditions
20 within both groups ($p > 0.1$ for both paired-samples t-tests).

21

22 **Study 2**

23 To determine if the asymmetric positive effects of the interventions extended to

1 intergroup conflicts that differ in region and severity, we conducted a second study in the
2 context of one of the most salient conflicts in the world today: the conflict in the Middle
3 East between Israelis and Palestinians. This study expanded on study 1 in two ways.
4 First, in addition to perspective-taking and perspective-giving, study 2 included a control
5 condition that involved reading about the outgroup, and writing an essay about one's own
6 group's experiences (i.e. the information-exchange elements of a dyadic interaction) but
7 not actively listening to or being heard by a member of the other group. Second, attitudes
8 towards the outgroup were assessed both immediately after and also 1 week following the
9 intervention to determine the duration of attitude change.

10 Study 2 also extended Study 1 by assessing attitudes about the interaction and
11 interaction partner. These ratings were used as continuous regressors to determine if
12 different aspects of the interaction helped to explain the variances in responses towards
13 the outgroup. Finally, study 2 allowed us to address an ambiguity that was present in
14 study 1. In Arizona, attitudes towards the ideological conflict over immigration among
15 White Americans was rather heterogeneous; therefore the script used by the White
16 confederates did not reflect the views of all the White participants in Study 1. In study 2,
17 attitudes towards the conflict were more homogeneous for Israelis and Palestinians: when
18 responding to the prompt, "What are one or two of the issues that make life in your
19 country most difficult", Palestinians wrote about some aspect of "the occupation", and
20 Israelis wrote about "security issues" relating to the conflict. Thus, in Study 2 the script
21 used by confederates in the Sending condition was more similar to the essays written by
22 all of the real Israeli participants than it was for White Americans in Study 1.

23

1 **Methods**

2 *Participants*

3 Participants were recruited simultaneously in Ramallah (Palestinians, $n = 65$ (29 f), mean
4 age = 24 ± 2 s.d.) and Tel Aviv (Israelis, $n = 59$ (26 f), mean age = 24 ± 4 s.d.) for “an
5 MIT psychology study” conducted in English that “may include a brief internet-based
6 interaction with members of other cultures”. Palestinian and Israeli participants were each
7 randomly assigned to one of three groups: 1. Sender (Perspective-giving), 2. Responder
8 (Perspective-taking) and 3. Control. Participants were paid 60 Israeli Shekels (\$15 US)
9 for participating in each session of the two-session study (\$30 US total).

10

11 *Procedure*

12 Israeli participants arrived to the research site in Tel Aviv and Palestinian participants
13 arrived to the research site in Ramallah; all participants filled out a consent form, and
14 were then briefed on the experiment by the investigator. None of the Palestinian
15 participants had taken a course in experimental psychology, and none had ever
16 participated in a psychology study. The study was described as follows: “You will take
17 part in two separate studies. The first is designed to understand similarities and
18 differences in beliefs, values and attitudes in people from different cultures. We will be
19 looking at stability and variability in beliefs over time, so we will break this questionnaire
20 into 3 parts, given over two different days. The purpose of the second study, which will
21 occur only once on the first day, is to understand how people communicate with others
22 about social issues. In particular, we are interested in how people from different cultures

1 present their point of view, and how people understand and communicate the views of
2 others.

3 Study #1:

4 You will be seated in front of a computer display. An experimenter will give you
5 instructions on the experimental task. During the experiment you will indicate your
6 opinion on a series of questions about your beliefs, values and attitudes. At the end of the
7 series of questions, you will perform a sorting task. You will complete another set of
8 questions and another sorting task at the end of the session (after Study #2), and the last
9 set of questions you will complete 1-2 weeks later.

10 Study #2:

11 You will be asked to either write your thoughts on an issue, read someone else's thoughts
12 on the issue, or both. You will then be asked your opinion of the other person's
13 communication skills and strategies.

14 The first session (first two parts of study #1 and study #2) will take 1 hour, and the
15 second session (third part of study #1) will take place 1-2 weeks later and will take 20
16 minutes."

17 Participants were told that the study was being conducted with multiple cultural groups
18 around the world. The questionnaire used different fonts and layouts to encourage
19 perception of the two 'studies' as unrelated. Participants were then directed to a laptop
20 computer to begin the experiment. A research assistant fluent in Arabic (for Palestinians)
21 or Hebrew (for Israelis) was on-hand to answer any questions. When not answering a
22 question, the assistant remained far enough away so that he/she could not see the
23 computer screen. The entire study was conducted in English.

1

2 *Measures*

3 Initial attitudes towards the outgroup were measured using nine key items, similar
4 to those given in study 1, assessing attitudes (2 item), trust (2 items) (Nadler and
5 Liviatan, 2006), perceptions of outgroup bias (2 items), empathy towards the outgroup (2
6 items), and warmth (1 item).

- 7 1. (Attitude) If I had a chance to introduce Palestinian/Israeli visitors to my friends
8 and neighbors, I would be pleased to do so.
9
10 2. (Attitude) Palestinians/Israelis are more violent by nature than
11 Israelis/Palestinians. (reverse scored)
12
13 3. (Trust) I believe that the Palestinians/Israelis are adhering, and will adhere, to
14 written agreements towards a lasting solution in the Middle East.
15
16 4. (Trust) I do not believe in the peaceful intentions of the Palestinians/Israelis.
17 (reverse scored).
18
19 5. (Perception of Bias) When considering issues related to the conflict in the Middle
20 East, the average Palestinian/Israeli is motivated by: ideology. (reverse scored).
21
22 6. (Perception of Bias) When considering issues related to the conflict in the Middle
23 East, the average Palestinian/Israeli is motivated by: evaluation of available data
24 on the issues.
25
26 7. (Empathy) I feel as sad when I see a Palestinian/Israeli suffering as when I see an
27 Israeli Jew/Palestinian suffering.
28
29 8. (Empathy) When I see a Palestinian/Israeli grieving over a lost family member, I
30 think about myself in that situation.
31
32 9. (Warmth) Indicate how warm or cold you feel towards Palestinians/Israelis.
33

34 All of the measures ($\alpha = 0.7$) were averaged to yield a single score for ‘attitude
35 towards the outgroup’. For each participant, any item that deviated by 90 points or more
36 between sessions was discarded (representing ~4% of the data points).

1

2 In each questionnaire, the 9 key items were embedded among 50 filler items. The filler
3 questions included all items from 3 personality measures: the Balanced Emotional
4 Empathy Scale (BEES) (Mehrabian and Blum, 1996), the Social Dominance Orientation
5 (SDO_s) scale, and the Right-Wing Authoritarian (RWA) scale (Altemeyer, 1981), as well
6 as attitude measures about relatively neutral groups (e.g. White Americans). A random
7 subset of questions from each filler scale was presented on each section of the
8 questionnaire. A mood question (anchored at ‘relaxed and ‘anxious’) was given at the
9 beginning of each questionnaire. All questions were answered using a continuous slider,
10 so participants could not recall their exact responses to repeated questions across the
11 questionnaires.

12

13 *Part I: Questionnaire*

14 The questionnaire given prior to the intervention was preceded by questions to assess
15 gender and age, political, social and religious conservatism (assessed separately using 9-
16 point Likert scales anchored at ‘very liberal’ and ‘very conservative’), and religious and
17 ethnic identities. Participants were then presented with the first version of the
18 questionnaire (9 dependent measures and 50 filler items); question order was randomized
19 for each participant.

20

21 *Part II: Dyadic interaction.*

22 The written instructions for the interaction were similar to Study 1 (for full text of the
23 instructions see Supplementary Materials), with a slight variation in the essay topic: the

1 Sender was instructed to write on “one or two of the issues that makes life in your
2 country most difficult, and the psychological effects it has on the people living there”,
3 and the Responder was instructed to summarize what the Sender wrote, but to avoid
4 including their own attitudes, beliefs or evaluations. The interactions were all conducted
5 in English (for examples of the scripts and complete sample interactions, see
6 Supplementary Materials), and lasted approximately 20 minutes.

7 After hearing the instructions, participants were assigned a role (Sender or Responder)
8 and told the identity of their interaction partner (a member of the opposite group).
9 Participants were given the opportunity to withdraw from the study rather than participate
10 in the interaction. Three Palestinians chose to withdraw rather than interact with an
11 Israeli.

12 In the Control condition, participants were instructed to read an essay by a member of the
13 opposite group about “one or two of the issues that makes life in your country most
14 difficult, and the psychological effects it has on the people living there” and then to write
15 their own essay on the same topic. Similar to study 1, Israeli and Palestinian confederate
16 scripts were created and verified by a separate group of volunteers prior to the study: we
17 asked 3 or 4 members of each group who were not part of the study to respond to the
18 question, “Describe one or two of the most difficult aspects of life in your country and
19 explain the psychological effect these difficulties have on the people living there” (the
20 same question given to participants). We then created a composite of their responses,
21 matched across group pairs (paragraph by paragraph), for length, semantic content and
22 general tone. The scripts were then shown to another set of group members for further
23 feedback, to ensure that they were perceived as fairly representing the views of each

1 group. The out-group essay was the same script used by the out-group confederate in the
2 Sender role.

3

4 *Part III: Questionnaire*

5 Following the intervention, each participant rated the interaction and their interaction
6 partner by answering the following questions:

7 1. “How effectively did the other person describe the concerns of their community?”

8 (for Responders & Control) or “How effectively did the other person summarize
9 the concerns of your community?” (for Senders).

10 2. “How empathetic did the other person seem?” (for Senders and Responders only)

11 3. “How likable did the other person seem?” (for Senders and Responders only)

12 4. “How typical of his or her group did the other person seem?” (for Senders and
13 Responders only)

14 5. “Would you be willing to talk more about these issues with this person in the
15 future?” (for all conditions)

16 Question 4 was included to ensure that participants viewed the confederates and the
17 scripts as typical of the other group, not as extreme outliers. The remaining questions
18 were included to test whether participants’ satisfaction with the interaction, and feelings
19 about their interaction partner, would predict attitude change towards the other group.

20 After these evaluation questions, participants then completed a second
21 questionnaire, which included the same 9 dependent measures, and 50 filler items (some
22 repeated from the first two questionnaires and some novel); question order was
23 randomized across versions of the questionnaire and between participants. In order to

1 decrease suspicion of repeating items, participants were told that the questions on each
2 questionnaire were being chosen at random by the computer from a large bank of
3 questions; therefore some of the questions they saw in the second (and third)
4 questionnaire would be similar to those they had seen previously, some would be the
5 same, and some would be different. In debriefing, participants in the Sender/Responder
6 conditions expressed no awareness of the Control condition (and vice versa), or why
7 these conditions would be used or compared. Once informed of the groups involved the
8 conditions of the study, participants did not guess which condition would be most
9 effective within their own group, or how this would differ across groups.

10

11 *Part IV: Questionnaire*

12 One week later, the participants returned for a third questionnaire, again containing the 9
13 key items and 50 filler items (some repeated from the first two questionnaires and some
14 novel); question order was again randomized across versions of the questionnaire and
15 between participants. Participants were then fully debriefed about the purpose of the
16 study, and paid.

17

18 **Results**

19 *Interactions*

20 Participants in both groups and for all three conditions were highly engaged in the
21 task, and participants perceived their interaction partners (confederates) to be
22 representative of their respective groups: on a scale of 100, mean ratings from ‘not at all’
23 to ‘completely’ typical of his group were 56 ± 29 s.d. for Palestinian confederates and 65

1 ± 22 for Israeli confederates. Importantly, confederates within each group were rated
2 equally typical across each condition (perspective-taking and perspective-giving) (both p-
3 values > 0.2), and within each condition, confederates from each group were judged to be
4 equally representative of their groups (both p-values > 0.4). This suggests that the
5 confederate scripts and behaviors were balanced across groups between conditions, and
6 were within the expected range of intergroup interactions.

7 Although the specific topic of the essays was left open (“the most difficult aspect of
8 life in your country”), Israeli and Palestinian participants in the Sender role wrote about
9 topics relevant to the conflict, as expected. All but one Israeli and all but one Palestinian
10 wrote about some aspect of the Israeli-Palestinian conflict (for full sample interactions
11 see Supplementary Table 1). Approximately half of all Israeli participants wrote
12 specifically about the threat of terrorism, and the problems stemming from the societal
13 fear of war. The most commonly mentioned terms were: ‘rockets’, ‘Iran’ and ‘Hamas’.
14 For Palestinian participants in the Sender role, the most commonly invoked concepts
15 were ‘occupation’ and ‘checkpoints’. In addition, approximately 25% of Palestinians
16 mentioned each of the following topics: ‘the separation wall’, ‘appropriation of
17 Palestinian land by Israel’, ‘lack of a viable Palestinian state’, ‘lack of freedom of
18 movement’, and the ‘killing of Palestinians by Israel’ (see Table 2 for sample responses).
19 Particularly for Palestinians in the Sender role, many of the essays invoked very personal
20 and extremely emotional experiences (e.g. ‘my grandfather was murdered’, ‘my brother
21 lost his arm’, ‘Israel denied a permit to my company’). Topics discussed by both sides
22 were very similar to those invoked by the confederate scripts (for samples of the
23 dialogues, see Supplemental Materials).

1 Participants in the Control condition wrote on the same topics as participants in the
2 Sender condition, and in at least as much detail. In fact, Palestinians in the Control
3 condition wrote longer essays (mean words = 305 ± 185 s.d.) than those in the Sender
4 condition (238 ± 185), although this difference did not reach significance ($t(44) = 1.5$, $p =$
5 0.15). Similarly, Israelis wrote as much in the Control condition (223 ± 100) as in the
6 Sender condition (249 ± 112) ($t(34) = 0.7$, $p = 0.47$).

7 During debriefing, none of the members of either group indicated suspicion of the
8 hypotheses of the study, or the link between the questionnaires and the interaction.

9

10 *Attitude change*

11 As predicted, the effects of the interventions were again asymmetric, replicating the
12 results of Study 1 (Table 3). For Israelis, all types of interaction led to some positive
13 changes in attitudes towards Palestinians, but only the perspective-taking condition
14 (Responder role) led to significant overall change. Positive attitude change occurred in
15 79% of Israelis after perspective-taking (mean change = 5.6 ± 2.1 (sem); $t(18) = 2.6$, $p <$
16 0.05), in 60% of Israelis after perspective-giving (mean change = 2.9 ± 2.0 (sem); $t(19) =$
17 1.4 , $p = 0.17$) and in 75% of Israelis in the control condition (mean change = 3.4 ± 1.7
18 (sem); $t(19) = 2.0$, $p = 0.06$).

19 For Palestinians, on the other hand, the only condition in which a majority of
20 participants showed a positive change in attitudes towards Israelis was the perspective-
21 giving condition (72%; mean change = 8.2 ± 2.6 (sem); $t(21) = 3.1$, $p < 0.005$). There was
22 positive change in 50% of Palestinians after perspective-taking (mean change = 1.5 ± 2.0
23 (sem); $t(19) = 0.7$, $p = 0.47$) and in 42% of Palestinians in the Control condition (mean

1 change = -0.05 ± 2.1 (sem); $t(23) = 0.2$, $p = 0.81$). Overall, there was no significant
2 difference between the interaction conditions for Israeli participants, but Palestinian
3 attitudes changed more in the perspective-giving condition than either the perspective-
4 taking (independent-samples t-test, equal variance, $t(40) = 2.0$, $p < 0.05$) or Control
5 conditions ($t(44) = 2.6$, $p < 0.05$). Consequently, there was a significant interaction
6 between group (Palestinian, Israeli) and the effectiveness of the interventions (Sender,
7 Responder, Control, ($F(2,119) = 3.2$, $p < 0.05$) in a between-subjects ANOVA), and no
8 main effects of either group or intervention condition (Figure 4A).

9 Across items, for Palestinians the greatest change was in the Sender condition,
10 compared to either the Responder or Control conditions, for 8/9 items (Fisher's Exact
11 test, $p < 0.005$). Similarly, a repeated-measures item analysis found that greater positive
12 change in the Sender condition was reliable across items, in Palestinian participants ($F(2)$
13 $= 9.2$, $p = 0.001$). Change was more variable for Israelis across items (4/9 items showed
14 the greatest change for Responders, $p > 0.3$).

15 For the individual dependent measures, perspective-giving led to significant change
16 in attitudes for Palestinians on the items measuring Empathy (both items averaged) ($t(21)$
17 $= 2.5$, $p < 0.05$) and Trust (both items averaged) ($t(21) > 2.2$, $p < 0.05$; one sample t-test),
18 while change in Warmth was marginally significant ($t(22) = 1.9$, $p = 0.07$). For Israelis in
19 the perspective-giving condition, Warmth also changed significantly ($t(19) = 2.6$, $p <$
20 0.05). On the other hand, Israelis in the perspective-taking condition changed
21 significantly in the (averaged) Attitude items ($t(18) = 2.2$, $p < 0.05$), and the (averaged)
22 Trust measures showed a marginal effect ($t(18) = 1.8$, $p = 0.10$). There were no other
23 significant effects for individual items, for any of the other conditions for either group.

1 The effect of the interventions was not due to changes in overall anxiety. Self-
2 reported mood (from ‘anxious’ to ‘relaxed’) did not change for either group or for any
3 intervention condition (no main effects or interactions, in a mixed ANOVA of pre- versus
4 post- intervention survey, interaction-type and group, all $p > 0.05$).

5

6 *Predictors of attitude change*

7 We first asked whether any demographic or individual differences measures could
8 predict which participants would show the strongest change in attitude. Thus we
9 compared changes in attitudes, for each group and each condition, by age, gender, and
10 scores on three personality scales: the BEES, SDO and RWA (included as the filler items
11 in the questionnaires). See Supplementary Table 3 for results of all correlations with
12 these measure. We found evidence for two relationships. For Palestinians in the
13 perspective-taking condition, positive change in attitudes was negatively correlated with
14 BEES (Pearson $r = -0.54$, $p < 0.05$). For Israelis in the perspective-giving condition,
15 attitude change was greater for males than females ($t(18) = 3.9$, $p < 0.05$). No other
16 individual differences predicted attitude change in any condition.

17 Then we asked whether change in attitudes would be predicted by individuals’
18 initial attitudes towards the outgroup, prior to the interaction. For example, we were
19 interested in whether the greatest change was observed in individuals who were already
20 most liberal and positively oriented towards the other group. In both groups, positive
21 attitude change was negatively correlated with initial attitudes (Israelis, $r = -0.42$, $p <$
22 0.001 ; Palestinians, $r = -0.24$, $p < 0.05$). That is, participants with initially more positive
23 attitudes towards the outgroup were not the ones showing greatest positive change. No

1 group approached the top of the scale (Table 3) in their attitudes towards the other group,
2 on any scale. Nevertheless, since individuals with more initial bias had more “room” to
3 change their attitudes, these results should be interpreted with caution.

4 Finally, we examined whether the quality of the interaction itself predicted attitude
5 change for the perspective-taking and perspective-giving conditions. Immediately after
6 the interaction, participants rated how well they felt their interaction partner performed
7 their task (i.e. how well they expressed themselves as a Sender, or how well they
8 summarized as a Responder), how empathetic and likable the interaction partner was, and
9 how willing they would be to meet and talk with their interaction partner again. For full
10 results of these means and correlations, see Supplementary Materials Tables 2 and 3. For
11 Israelis in the Responder role (perspective-taking), positive change in attitude towards
12 Palestinians correlated both with their rating of how empathetic (Pearson $r = 0.65$, $p <$
13 $.005$) they felt their interaction partner was and how willing they were to meet the partner
14 again (Pearson $r = 0.52$, $p < .05$). None of the ratings predicted change in attitudes for
15 Israelis in the Sender role or the Control condition. For Palestinians in the Sender role
16 (perspective-giving), positive change in attitude towards Israelis correlated with ratings
17 of their partner’s Performance (Pearson $r = 0.45$, $p < 0.05$). No other rating predicted
18 Palestinian attitude change, in any condition.

19

20 *Durability of attitude change*

21 For both groups, changes in attitudes towards the out-group were transient: one
22 week after the intervention, no significant effect remained (Figure 4B). The limited
23 temporal effect is perhaps disappointing but not surprising, given the very brief

1 interaction. Future studies should test whether a longer intervention (e.g. multiple
2 interactions) can create more enduring effects.

3

4 **Discussion**

5 When cross-group dialogue was divided into its component parts, White
6 Americans showed greater positive attitude change towards Mexican immigrants after
7 perspective-taking, and Mexican immigrants showed greater positive attitude change
8 towards White Americans after perspective-giving. Israelis and Palestinians presented a
9 similar asymmetry: Israelis showed more positive change in attitudes after perspective-
10 taking, while Palestinians showed a positive change in attitudes only after perspective-
11 giving. These two conflicts differ on many dimensions, including religion, ethnicity,
12 language, history, duration, lethality and current intensity. One shared aspect of these
13 conflicts is the asymmetry of power between the two groups. We suggest that
14 perspective-taking is more likely to improve attitudes of empowered towards
15 disempowered groups, whereas perspective-giving is more likely to improve attitudes of
16 disempowered towards relatively empowered groups.

17

18 *Perspective-taking*

19 Perspective-taking has been established as a method to improve attitudes towards
20 other groups, and has been implemented across a range of modalities including writing a
21 “day in the life” story (Galinsky and Moskowitz, 2000), listening to an audio narrative
22 (Batson et al., 2002; Batson et al., 1997), watching a video about an outgroup member
23 (Vescio et al., 2003; Vorauer and Sasaki, 2009), or role-playing (Clore and Jeffery, 1972;

1 Stewart et al., 2003). The present study implemented perspective-taking through a real-
2 time interaction, via video and text based chat interface, with active listening instructions.
3 The results extend the current literature in a number of ways. First, we demonstrate that
4 perspective-taking can effectively alter attitudes not just towards unfamiliar outgroups,
5 but towards antagonistic outgroups. Second, and encouragingly, we find that positive
6 attitude change is not limited to the dominant group members who are initially most
7 sympathetic to the non-dominant group. It is interesting to consider this result in light of a
8 previous study finding that active perspective-taking among the European Canadians who
9 had high initial prejudice towards Native Canadians led to some negative, or ironic,
10 effects (Vorauer and Sasaki, 2009). Compared to taking an “objective stance”, active
11 perspective taking towards the plight of Native Canadians led to increased meta-
12 perceptions of racism, and fear of blame, especially in those individuals who initially
13 perceived that their group (White Canadians) was viewed negatively by the target (Native
14 Canadian). In the present study, White Americans and Israelis listened to opposing
15 perspectives, and were actively engaged in summarizing those views. We suggest that
16 active listening in a dialogue paradigm has two benefits: first, virtuous active listening
17 which is witnessed by the other group may fulfill the need of dominant group members to
18 be perceived as moral (Shnabel et al., 2009) and to improve the dominant group’s
19 reputation (Brown et al., 2008). Second, because the confederate scripts were deliberately
20 partially exculpating (e.g. “I know not all Israelis are like this”), our paradigm may have
21 decreased expectations of being blamed and meta-perceptions of bias, therefore
22 mitigating defensive reactions.

1 An interesting question for future research will be to disentangle the roles that the
2 information exchange (i.e. reading the other’s side’s view) versus engaging in active
3 listening (i.e. accurately summarizing the other side’s view) played in the perspective-
4 taking condition. In Study 2, the control condition, which included a similar information
5 exchange without the active listening instructions, led to marginal positive change in
6 Israelis, only marginally less than the full perspective-taking condition. Future studies
7 will need to determine what role the modality and quality of engagement have on the
8 effectiveness of perspective-taking, particularly for members of the dominant group with
9 the most negative initial views.

10 The present research also sets limits on the efficacy of perspective-taking.
11 Perspective-taking effectively improved attitudes towards an outgroup, but only for
12 members of dominant groups; members of non-dominant groups showed either no
13 positive response to perspective-taking (Palestinians), or a pronounced negative response
14 (Mexican immigrants), illustrating the “dark side” of perspective-taking (Galinsky et al.,
15 2005; Paluck, 2010).

16

17 *Perspective-giving*

18 A needs-based model of group reconciliation suggests that the psychological
19 requirements of empowered and disempowered groups are distinct, and should be
20 separately addressed in a successful reconciliation effort (Shnabel and Nadler, 2008;
21 Shnabel et al., 2009). The quantitative results from the present study suggest that the need
22 to express oneself is particularly important for some groups: perspective-giving was a
23 more effective intervention than perspective-taking for non-dominant or disempowered

1 group members. Positive attitude change in the perspective-giving condition was
2 particularly striking for Palestinians. Positive change in attitudes towards Israelis
3 occurred despite the fact that participants had immediately previously been writing about
4 the ways in which they suffered in the face of Israeli occupation, and despite the fact that
5 the Responder confederates only summarized the Palestinian Senders' own views,
6 without endorsing or supporting those views.

7 Senders, in the perspective-giving condition, were given the opportunity to
8 express their views, and feel "heard" by a member of the outgroup. Two pieces of our
9 evidence suggest that feeling heard was key to the success of the intervention. First,
10 change in attitudes towards Israelis was correlated in Palestinians with how effectively
11 they felt that the interaction partner summarized their views (but not with how empathetic
12 or likable they thought their interaction partner was). Second, writing on the same topic
13 in the absence of an interaction partner (Control condition) did not generate the same
14 change in attitudes towards the outgroup, despite the fact that Palestinian participants in
15 the Control condition wrote at least as much as the participants in the Sender role. Thus,
16 even though participants in the Control condition experienced *both* the information about
17 the other group's experience (matched to the Responder condition), and the chance to
18 express their own views of the conflict (matched to the Sender condition), they showed
19 no positive change in attitudes towards the other group, suggesting that the interactive
20 nature of dialogue, even in this minimal experimentally controlled context, is a powerful
21 driver of positive attitude change. Future studies should test the role of feeling heard,
22 specifically by a member of the conflict group, by comparing conditions in which the

1 Sender writes to a partner who does not respond, and to a partner from another group
2 who is not involved in the conflict.

3

4 **Mechanism of action**

5 For perspective-taking, it has been suggested that positive attitude change is
6 mediated by merging of the self with the other person, which can result in a decrease of
7 stereotypes across group boundaries (Davis et al., 1996; Galinsky et al., 2005). By this
8 process, members of the outgroup would come to be viewed more positively, and become
9 more approachable after perspective-taking. Our results support this view for Israelis in
10 the perspective-taking condition: change in attitudes correlated positively both with how
11 empathetic their interaction partner seemed, and with the participants' willingness to
12 meet the partner again. Perspective-giving showed a completely different profile: positive
13 attitude change was not predicted by traits of the partner, for either group, nor did it
14 correlate with an increased willingness to meet about the issues again. Instead, attitude
15 change by perspective-giving was predicted (in Palestinians only) by ratings of how
16 effectively the interaction partner summarized the participants' statement. These data
17 suggest that the mechanisms that drive positive attitude changes after perspective-taking
18 and perspective-giving are distinct.

19 Although the current study was not designed to identify the specific cognitive or
20 emotional mediators of 'feeling heard', some general mechanisms can be excluded.
21 Previous work has shown that the effect of intergroup contact on reducing prejudice is
22 mediated by reducing anxiety (Islam and Hewstone, 1993; Paolini et al., 2004). By

1 contrast, perspective-giving did not lead to overall changes in participants' anxiety during
2 the current experiment.

3 One interesting possibility is that perspective-giving (and feeling heard) increases
4 perceptions of fairness. Having an opportunity to speak, and be heard, increases
5 perceptions of fairness in procedural justice experiments (Van den Bos, 1999) and in
6 interpersonal bargaining (Kass, 2010). Perceived fairness may then promote empathy and
7 trust, which are mediators of attitude change in many studies of intergroup reconciliation
8 (González et al., 2011; Nadler and Liviatan, 2006; Noor et al., 2008a; Noor et al., 2008b;
9 Tam et al., 2009). For example, trust between real conflict groups is associated with
10 willingness for intergroup reconciliation (Nadler and Liviatan, 2006), intergroup
11 forgiveness (Noor et al., 2008a; Noor et al., 2008b), and positive approach tendencies
12 (Tam et al., 2009), which each constitute key steps towards intergroup reconciliation. In
13 our study, we included measures of empathy and trust as dependent measures. In Study 2,
14 measures of Trust (Nadler and Liviatan, 2006) between Palestinians and Israelis showed
15 the same pattern of change as the overall scale: Palestinian's trust of Israelis improved
16 only after perspective-giving, whereas Israeli trust of Palestinians improved (marginally)
17 only after perspective-taking. Therefore, future studies should specifically test whether
18 perceptions of fairness and trust mediate the effects of dialogue on other measures of
19 intergroup attitudes.

20 Finally, although we hypothesize that intergroup differences in power or
21 dominance are responsible for the interaction between group membership and condition
22 in our experiments, we did not explicitly measure our participants' experience or
23 perceptions of intergroup power. Future research should directly investigate whether

1 individual and group power predicts differential responses to perspective-taking versus
2 perspective-giving, across contexts. For example, in interpersonal and romantic
3 relationships, dependent or lower-power individuals are less likely to express opinions
4 and complaints than higher power individuals (Cloven and Roloff, 1993; Dunbar and
5 Burgoon, 2005; Islam and Zyphur, 2005; Solomon et al., 2004); perspective-giving
6 exercises might therefore be beneficial in interpersonal conflict management.

8 **Implications for Dialogue programs**

9 A particularly striking aspect of these results is that all participants were aware
10 that both members of the interaction were *assigned* to their roles. Consequently, Senders
11 were aware that Responders were following experimental instructions to summarize the
12 Sender's statement without indicating their own beliefs. The efficacy of the perspective-
13 giving intervention in spite of this awareness may occur (1) because observers over-
14 attribute corresponding beliefs, when they hear someone make an assigned statement
15 (Allison et al., 1993; Jones and Harris, 1967) or (2) because the Senders (perhaps
16 correctly) inferred that being forced to summarize the Sender's view (i.e. perspective-
17 taking) would cause the Responders to better understand it, and thus increase the
18 Responder's concern for the Sender's group. These alternative mechanisms should be
19 tested in future studies. In either case, this feature of the current results holds promise for
20 future applications in conflict resolution programs: the instructions for the asymmetric
21 exchange can be given, without deception, to all members of the interaction without
22 undermining the efficacy of the perspective-giving role.

1 With conflicts as high-stakes as those between White Americans and Mexican
2 immigrants, and between Israelis and Palestinians, extrapolation from these results should
3 proceed with caution. First, we note that long-term attitude change is not accomplished
4 easily (Crano and Prislín, 2006). The current results represent a best-case scenario for an
5 interaction, since the interaction partner was a confederate with experience in inter-group
6 dialogue. Confederates were explicitly instructed to avoid aggressive behavior, and
7 (when the participant was in the perspective-taking or control condition) the confederate
8 scripts included a specific statement aimed at diffusing defensive reactions (e.g. “I know
9 not all Israelis/Palestinians are like this...”). As such, the interaction fulfilled the
10 requirements of an ideal perspective-taking experience (Batson and Ahmad, 2009).

11 Second, the profile of observed changes differed across contexts: although
12 perspective-giving had a significantly better effect than perspective-taking for Mexican
13 immigrants and resulted in positive change in over 60% of participants, neither
14 intervention resulted in a statistically significant positive mean change in attitudes
15 towards White Americans. Future research will have to investigate conditions that
16 maximize the effectiveness of perspective-giving for different groups and contexts.

17 Third, in our experiment participants were restricted to only one side of a
18 dialogue, and Responders were asked to withhold their own views and judgments. In
19 longer-term interactions, such exclusively uni-directional communication should be
20 discouraged. Perhaps the most immediately practical implication of these results is to
21 consider which group (a) begins by playing the role of speaker versus listener in a
22 dialogue program, and (b) spends the most time in the role of speaker versus listener. For
23 example, a recent analysis of Israeli-Palestinian dialogue programs (Hammack, 2011)

1 found that Israeli participants spend significantly more time speaking than Palestinians
2 (quantified as number of utterances). These programs were judged to be ineffective,
3 especially for Palestinian participants, as our results predict. While the authors suggest
4 that the smaller number of utterances by Palestinians is an indicator of
5 disenfranchisement with the dialogue program, the current results suggest that lower
6 perspective-giving among Palestinians could also be part of the cause of the failure of
7 these programs. Another possible application would be the use of “active listening” in
8 Dialogue programs, in which each side is given the task of summarizing the other side’s
9 perspective as effectively as possible (Zúñiga and Nagda, 2001).

10

11 **Conclusions**

12 With these caveats, our results indicate that strong beliefs held by members of
13 groups involved in a range of conflict situations can change following a positive
14 interaction with an out-group member. Particularly for Palestinians in the perspective-
15 giving condition, this change was dramatic after a very short interaction that involved no
16 negotiation, agreement or resolution, with a partner who was not necessarily sympathetic
17 and was known to be playing an assigned role. The interaction was mediated by a video
18 connection, not literally face-to-face, illustrating the potential for positive conflict
19 resolution interventions that can span walls and borders and reach a larger audience than
20 person-to-person contact programs.

21 The present study examined the effect of individual elements of dialogue. As
22 such, our approach is complimentary to quantitative evaluation of large-scale dialogue
23 programs that are composed of many elements (Zuñiga et al., 2002). Here we

1 demonstrate that scientific experiments, using randomized controlled designs and
2 quantitative outcome measures, can be used to evaluate which aspects of conflict
3 resolution programs are most effective for the different groups involved.

4

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23

1 **Figure Legends**

2

3 **Figure 1. Experimental design: Arizona.** Participants for the Arizona study came in on
4 one occasion for the study and completed surveys, which including the dependent
5 measures, both immediately before and immediately after an online (video- and text-
6 based) interaction.

7

8 **Figure 2. Change in attitudes towards the out-group in White Arizonans and**
9 **Mexican immigrants depends upon group membership and intervention type.** Each
10 bar of the graph represents average within-subject changes in attitude towards the out-
11 group, averaged across all dimensions, for each condition (Listen = perspective-taking;
12 Speak = perspective-giving). Differences in attitudes towards the outgroup were
13 determined in White and Mexican immigrant participants in Arizona by comparing
14 attitudes immediately before the interaction to attitudes immediately after to the
15 interaction. Error bars represent S.E.M. *'s within a bar indicate significant change in
16 attitudes towards the outgroup within a condition (one-sample t-test); *'s between bars
17 indicate significant differences between conditions (two-sample t-test). * = $p < 0.05$, ** =
18 $p < 0.005$.

19

20 **Figure 3. Experimental design: Middle East.** Participants for the Middle East study
21 came in on two separate occasions for the study and took surveys, which included the
22 dependent measures, immediately before, immediately after, and then one week after an
23 online interaction.

1

2 **Figure 4. Change in attitudes towards the out-group in Israelis and Palestinians**

3 **depends upon group membership and intervention type.** Each bar of the graph
4 represents average within-subject changes in attitude towards the out-group, averaged
5 across all dimensions, for each condition (Listen = perspective-taking; Speak =
6 perspective-giving). Difference in attitudes towards the outgroup were determined in
7 Israelis and Palestinians by comparing attitudes **(A)** immediately before the interaction to
8 immediately afterwards, and **(B)** immediately before the intervention to 1 week after the
9 interaction. Error bars represent S.E.M. *'s within a bar indicate significant change in
10 attitudes towards the outgroup within a condition (one-sample t-test); *'s between bars
11 indicate significant differences between conditions (two-sample t-test). * = $p < 0.05$, ** =
12 $p < 0.005$.

13

14 **Table Legends**

15

16 **Table 1.** Raw average scores for Study 1 by group and intervention. Higher numbers
17 indicate more positive attitudes towards the outgroup.

18

19 **Table 2.** Excerpts from participants' statements in the 'Sender condition', and, for
20 comparison, from the confederates' scripts representing the perspective of each group. As
21 these samples indicate, participants were willing to discuss intense personal experiences
22 relevant to the conflict, with content and tone that was similar to the confederate scripts.

23

1 **Table 3.** Raw average scores for Study 2 by group and intervention. Higher numbers
2 indicate more positive attitudes towards the outgroup.

3

4