

**Consequences of emphasizing genetic commonalities and differences on inter-ethnic
conflict:
Implications for peace and violence in the Middle East**

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ABSTRACT

Researchers have not yet tested the consequences of emphasizing *genetic* commonalities and differences on negative intergroup attitudes, intergroup aggression and on the implications for peace and violence. Moreover, there is also no work looking at whether emphasizing commonalities and differences, of any kind, impacts intergroup aggression and support for political compromise. To test these theories, I have conducted six complementary empirical studies in my dissertation. First, I explored whether emphasizing genetic commonalities (as opposed to genetic differences) reduces stereotyping (Study 1) and behavioral aggression between Arab-American and Jewish-American college students (Study 2). In Study 1, I also explored if implicit intergroup bias moderates the condition effect on explicit intergroup bias. In the following study, I explored whether emphasizing genetic commonalities (vs. differences and non-intervention) increases Jewish-American support for Israel-Palestine peacemaking (Study 3). With Israeli-Jewish adults, I then explored whether the intervention can increase willingness to make actual political compromises (Study 4) as well as increase willingness to interact with and provide humanitarian aid to Palestinians (Study 5). In Studies 4 and 5, I also explored mediators and moderators of these effects. Finally, using a sample of Jewish-Americans, I examined what specific factors make a genetic commonality intervention effective by comparing it with other emphases on non-genetic commonalities (Study 6). My findings suggest that the genetic commonality-difference dimension impacts intergroup attitudes, intergroup aggression as well as support for peacemaking and political compromises for among Jewish-Americans, Arab-Americans and Israeli-Jews.

CHAPTER 1:

Introduction & Theoretical Background

Violent ethnic conflicts are a pressing global challenge. In my dissertation research, I use the context of the Israeli-Arab conflict as a model for understanding how emphasizing ethnic groups' genetic similarities and their differences can either promote conditions for peace or exacerbate intergroup violence. Specifically, I examine whether increasing Jews' and Arabs' knowledge about their genetic similarities can decrease their negative attitudes and violent behaviors toward one another and increase their support for peacemaking and conciliatory political actions. Moreover, I also examine the contrasting consequences of empathizing inter-ethnic genetic differences on these intergroup outcomes. This may provide a unique means for helping to both understand and respond effectively to some of the world's bloodiest ethnic conflicts and genocides.

One of the most widely-used social psychological interventions for reducing negative attitudes is emphasizing a common identity (Gaertner & Dovidio, 2000 & 2008; also see Paluck & Green, 2009). Yet, although emphasizing commonalities between groups has been traditionally considered a highly effective tool for improving intergroup relations, emerging work suggests that the benefits of commonality-focused interventions are sometimes limited because they draw attention away from separate group identities (e.g., Hornsey & Hogg, 2000). Building on these understandings, I aim to demonstrate a novel way to engender a cross-group commonality that can overcome these limitations and generate more effective intergroup outcomes.

Specifically, in my dissertation research, I investigate a novel emphasis on shared versus different genetic lineages between ethnic groups. I hypothesize that, compared to an emphasis on

other commonalities, a focus on the genetic commonalities can generate particularly effective intergroup outcomes because it highlights a deeply-rooted similarity and thus, allows for a critical level of intergroup distinctiveness to still be maintained (Tajfel & Turner, 1979). Genetic information also tends to be seen as highly credible given its scientific nature and thus, may be particularly persuasive (Dar-Nimrod and Heine, 2011). Moreover, although the majority of the scientific community asserts that there is no biological basis for the notion of race (e.g., Anderson & Nickerson, 2005), people still tend to draw on genetic explanations when making inferences about racial and ethnic groups (e.g., Dienstbier, 1972; Gil-White, 2001). This tendency towards genetic explanations results in the perception that racial and ethnic groups are distinctive, natural and un-changeable (Rothbart & Taylor, 1992; Haslam et al. 2000) and is associated with increased stereotyping and prejudice (Dar-Nimrod and Heine, 2011). However, if we can make individuals from ethnic groups in conflict believe they share a close genetic lineage, it may be possible to drastically reduce genetic explanations for unfavorable group differences and thus, the associated negative attitudes and behaviors that get in the way of peace. Evidence also suggests that breaking down the view that intergroup differences are due to genetic differences should reduce negative attitudes and behaviors because of an evolutionarily-based preference for those who share your genes (Hamilton, 1964; Dawkins, 1976; Wilson, 1975; Colman et al, 2012). Therefore, re-categorizing ethnic groups as belonging to one larger genetically related group may also be effective by creating the perception of kinship. Taken together, emphasizing genetic commonalities between ethnic groups in conflict may provide a powerful means of reducing conflict and promoting peace. Therefore, in my research, I attempt to increase awareness of genetic relatedness between groups engaged in conflict.

While testing this novel genetic commonality intervention, I also aim to contribute theoretical understanding to the broader emphasis on commonalities. Until now, commonality-focused interventions have not been applied to intergroup aggression and support for political compromise. Moreover, they have not been examined within the context of on-going inter-ethnic violence. Research on the effectiveness of commonality-based interventions outside the laboratory is also extremely limited (Nier et al., 2001 & Houlette et al., 2004). Therefore, in order to provide a scientifically-based intervention that has reliable implications for the world (Paluck & Green, 2009), I use a combination of social psychological theories, experimental methods and field-based approaches (Paluck, 2010). I examine this with both Jews and Arabs living in contexts high and low in on-going inter-ethnic violence (i.e. US and Israel). I also explicitly measure both intergroup aggression and support for political compromise.

The Israeli-Arab conflict provides an ideal model for developing this intervention given that the ethnic groups involved (i.e. Jews and Arabs) tend to be relatively unaware of their close genetic lineage. Recent research suggests that most Jews (including Ashkenazi-, Sephardi- and Moroccan-Jews) have remained relatively isolated from neighboring non-Jewish diaspora communities while descending from a common Middle Eastern population that includes numerous non-Jewish Arab populations (e.g. Palestinians, Syrians, Lebanese; see Hammer et al, 2000, Behar et al. 2010). However, although individuals living in both Israel and the occupied Palestinian territories are well-educated and share some of the highest literacy rates in the Middle East (UNDP report, 2011), anecdotal evidence suggests that these groups, as well as Jews and Arabs living in the diaspora communities, tend to be relatively unaware of their striking genetic commonalities. Therefore, I am hypothesizing that increasing awareness about these groups' shared genetic heritage may provide a important intervention for improving intergroup outcomes between Jews

and Palestinians/Arabs living in both Israel, the occupied Palestinian territories and in the United States. Specifically, by encouraging these groups to think of individuals from the other group as belonging to one larger genetically-related group, I aim to increase awareness of a common identity and to alter the perception that the other group's negative behaviors stem from innate genetic differences. Furthermore, I aim to show that altering perceptions about genetic similarities are different from emphasizing non-genetic similarities.

Although the Israeli-Arab conflict is extremely complex and involves such issues as imbalances in power and different economic realities, this research can contribute a novel approach to conflict reduction. Emphasizing genetic commonalities, and commonalities more broadly, does not involve the logistical problems of bringing parties in conflict together nor risks the resistance involved in approaches that try to directly teach groups in conflict to empathize with one another. Thus, it can be disseminated more easily and broadly. Moreover, this approach has relevance to a large number of on-going intra-national and international conflicts, and to efforts aimed at preventing future conflicts.

In summary, there are three important gaps in the current literature. Specifically: 1) the consequences of emphasizing *genetic* commonalities for improving negative intergroup attitudes, reducing intergroup aggression and for promoting peace has not yet been examined; 2) there is limited work examining whether emphasizing commonalities, of any kind, can reduce intergroup aggression and increase support for political compromises as well as whether it is effective within contexts in which there is on-going interethnic violence; 3) finally, there is a also minimal work examining whether emphasizing commonalities is effective outside the laboratory.

Theoretical Background

Value of highlighting commonalities. One of the most widely-used social psychological interventions for reducing intergroup prejudice and stereotyping is emphasizing a common ingroup identity (Gaertner & Dovidio, 2000). Beginning with the pioneering work of Sherif et al. (1961), and later elaborated on by Gaertner and Dovidio's (2000) *Common Ingroup Identity Model*, researchers have found that highlighting pre-existing shared group identities encourages people to think of individuals from different groups as belonging to one larger group which, in turn, reduces negative attitudes about outgroup members (see Paluck & Green, 2009). Yet, although numerous studies show that re-categorization reduces negative intergroup attitudes, emerging work suggests that attempting to create a common ingroup identity can sometimes lead to an actual increase in bias (e.g., Hornsey & Hogg, 2000). Because people are motivated to achieve a positive self-image (Abrams & Hogg, 1998; Ellemers, Spears & Doosje, 2002), emphasizing a common identity can arouse a desire for positive distinctiveness (Tajfel & Turner, 1979), and thus, exacerbate rather than alleviate intergroup bias. Given the complexity of emphasizing commonalities, research exploring the effectiveness of novel commonalities-based interventions is needed. Moreover, since research on the implications of commonality-based interventions for reducing behavioral aggression and for contexts characterized by violent conflict is so far unproven, research exploring effective commonality-based interventions on reductions in behavior aggression and within a context of ongoing conflict is also critical.

While it may seem intuitive that the reduction of negative intergroup attitudes would lead to less negative behaviors, in actuality, the link between these is not yet well established (see Dovidio et al, 1996). Only two known studies have focused on this relationship. Using self-report measures, Struch and Schwartz (1989) found a weak, non-significant correlation between negative intergroup attitudes and behaviors while Dovidio et al.'s (1996) meta-analysis showed only a modest relationship. Therefore conflating a reduction of intergroup bias with a lessening of negative intergroup behavior is problematic and assumptions that highlighting common identities can reduce more than just intergroup bias is currently premature. In order to create an effective commonality-based intervention that has implications for reducing negative intergroup behaviors within the context of ongoing inter-ethnic conflict, I focus on genetic commonalities.

Value of emphasizing genetic commonalities. Regardless of having an actual understanding of genetics (e.g., Heyman & Gelman, 2000), people tend to turn to genetic explanations when attempting to understand human behaviors (e.g., Parrott et al., 2005; Shostak, Freese, Link, & Phelan, 2009; Singer, Corning, & Lamias, 1998). Moreover, although the majority of the scientific community asserts that there is no genetic basis for behavioral or cognitive differences between races (e.g., Anderson & Nickerson, 2005), people still tend to draw on genetic explanations when making inferences about racial groups (e.g., Dienstbier, 1972; Gil-White, 2001). This tendency towards genetic explanations results in the perception that racial groups are distinctive, natural and un-changeable (Rothbart & Taylor, 1992; Haslam et al. 2000) and is associated with increased stereotyping (see Dar-Nimrod and Heine, 2011). However, if we can make individuals from ethnic groups in conflict believe they share a close genetic lineage, it may be possible to drastically reduce genetic explanations for unfavorable group differences and, thus, the associated negative attitudes and behaviors that get in the way of peace.

Evolutionary theory also argues that the desire to further one's own genetic make-up results in a strong preference for those who share your genes (Hamilton, 1964; Dawkins, 1976; Wilson, 1975; Colman et al, 2012). Consistent with this, people like other people better if they are similar in appearance, and relationship satisfaction is greatest among couples that overlap on more (vs. less) heritable characteristics (Russell & Wells, 1991). This preference for genetically similar others has been found to extend to ethnic and national groups as well (Brigham & Richardson, 1979). Therefore, re-categorizing ethnic groups as belonging to one larger genetically related group may also increase positive attitudes and behaviors among ethnic groups by creating the perception of kinship. One study tested this emphasis on an individual level and found that emphasizing more (vs. less) heritable traits resulted in increased liking (Brigham & Richardson, 1979). However, researchers have not yet examined the consequences of emphasizing genetic commonalities on a group level. Taken together, emphasizing genetic commonalities between ethnic groups in conflict may provide a powerful means of reducing conflict and promoting peace.

Overview of the Studies

To test these theories, I have conducted six complementary empirical studies in my dissertation. First, I explored whether emphasizing genetic commonalities (as opposed to genetic differences) reduces stereotyping (Study 1) and behavioral aggression among Arab-American and Jewish-American college students (Study 2). In Study 1, I also explored if implicit intergroup bias moderates the condition effect on explicit intergroup bias. In the following study, I explored whether emphasizing genetic commonalities (vs. differences and non-intervention) increases Jewish-American and Arab-Americans' support for Israel-Palestine peacemaking (Study 3). With Israeli-Jewish adults, I then explored whether the intervention can increase willingness to make

actual political compromises (Study 4) as well as increase willingness to interact with and provide humanitarian aid to Palestinians (Study 5). In Studies 4 and 5, I also explored mediators and moderators of these effects. Finally, using a sample of Jewish-Americans, I examined what specific factors make a genetic commonality intervention effective by comparing it with other emphases on non-genetic commonalities (Study 6).

CHAPTER 2:

Reducing negative attitudes (Study 1)

In Study 1, I examined my prediction that highlighting genetic commonalities (vs. differences) will reduce explicit intergroup bias. I also examined the effects on implicit bias. While implicit bias is more stable, enduring and resistant to change (Bargh, 1999; Dovidio et al., 1997; Fazio et al., 1995; Greenwald et al., 1998) and has its roots in long-term socialization experiences (e.g., Dovidio, Kawakami, & Beach, 2001; Petty et al., 2006), explicit bias tends to be more recently acquired attitudes that are easier to change (e.g., Petty, Tormala, Briñol, & Jarvis, 2006; Wilson et al., 2000) and more susceptible to change with new information (Gawronski et al., 2006). Given that presenting people with new information has been found to be more likely to cause changes in explicit than implicit attitudes and because my intervention teaching people about new information, I expect to see a greater effect on explicit attitudes.

Participants

115 Jewish-Americans (62 males, 53 females; $M_{age}=18.60, SD_{age}=0.77$) and 53 Arab-American (21 males, 32 females; $M_{age}=19.14, SD_{age}=1.42$) were recruited in exchange for course credit via subject pool pre-screening procedures at *University of Michigan's Ann Arbor* and *Dearborn* campuses.

Procedure

In order to reduce demand characteristics that might induce participants to change their behaviors according to the assumed purpose of the experiment, this study was introduced as a

“memory and distraction” study. Moreover, subjects were not told that they were participating because of their ethnicity.

First, subjects were randomly assigned to read and memorize a one-page modified BBC article either reporting research that found striking similarities or reporting research that found striking differences in the DNA of Jews and Arabs. One article was entitled “Jews and Arabs are Genetic Brothers” and, the other, “Jews and Arabs are not Genetic Brothers” (See appendix B for examples). In order to emphasize distinctiveness between groups, this article also acknowledged that Jews and Arabs still have many differences. Participants then completed two “distracting tasks” before completing an alleged memory test. However, these tasks were actually used to measure explicit and implicit evaluations of Jews and Arabs via an explicit Jewish-Arab bias measure and the Implicit Association Test, respectively. They then completed various demographic questionnaires and were debriefed.

Measures

Explicit Jewish-Arab Bias was measured by asking participants to rate the typical Arab-Americans and Jewish-American on 4-bipolar dimensions using an 8-point scale (1-8): Peaceful-Violent, Friendly-Unfriendly, Mean-Nice and Helpful-Harmful (e.g., Bar-Tal & Labin, 2001; Hussmann et al, 2012). The reliability of the four items in this sample was $\alpha=.88$.

Implicit Jewish-Arab Bias was measured with the Implicit Association Test (IAT; Greenwald & Banaji, 1995; Greenwald, McGhee, & Schwarz, 1998). The version used was identical to that used by (Huesmann et al., 2012) which consists of Arabs and Jewish names and pleasant and unpleasant categories.

Strength of Ethnic Identification was measured with the 18-item Multi-group Ethnic Identity Measure (i.e. MEIM; Phinney, 1992; Roberts, 1999) in which participants rated how

much they agreed with statements regarding their experience with their own ethnic group (e.g. *I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs*) and other ethnic groups (e.g. *I often spend time with people from ethnic groups other than my own*) on a 4-point Likert scale (1=Strongly Disagree, 4=Strongly Agree). The scale has a high overall reliability in college samples, $\alpha=90$.

Perceived Genetic Similarity was examined by asking participants to rate on a 7-point scale (1=Strongly Disagree, 7=Strongly Agree) how much they agreed with the statement “*Jews and Arabs are genetically similar*”. This also served as a manipulation check.

Political Orientation was measured by asking participants to rate on a 5-point scale (1=Very Liberal, 3=Center, 5=Very Conservative) where they fall on the political spectrum.

Results.

Confirming the effectiveness of our manipulation, participants in the similarity condition agreed more than participants in the difference condition with the statement that Jews and Arabs are genetically similar ($M_s= 5.25$ vs. 3.04 , $SD_s=1.27$ vs. 1.70 , $t(165)=9.6$, $p<.001$). Jews and Arabs did not differ significantly in gender distribution $\chi^2(1)=2.96$, $p>.05$. However, the Arab population was significantly older than the Jewish population $t(54.25)=2.35$, $p<.05$.

Explicit Intergroup bias. Although Arab-Americans showed higher level of explicit intergroup bias than Jewish-Americans, $M_s=4.26$ vs. 3.73 , $SD_s=1.61$ vs. 1.24 , $F(1,164)=5.58$, $p<.05$, there was no interaction between condition and ethnicity, $F(1,164)=.31$, $p=.58$. This suggests that the manipulation had the same effect for both ethnic groups. Therefore, in the remaining analyses explicit intergroup bias was examined for Jews and Arabs as a combined group.

An ANOVA on the explicit measures of intergroup bias, after controlling for factors related to SES (i.e. education level and parents' income) and experiences with other ethnic groups, was then conducted. In the similarity (vs. difference) condition, the outgroup, as shown in Figure 1, was perceived as more friendly ($F(1,154)=6.11, p<.05$), less violent ($F(1,154)=4.56, p<.05$) and more helpful ($F(1,153)=4.25, p<.05$), however there was no significant difference found in regard to perceived outgroup meanness ($F(1,153)=.21, p>.05$). Because the Cronbach alpha on all four of these items was strong ($\alpha=.88$), a composite score was created. In similarity (vs. difference) condition, there was less explicit negative bias overall toward the outgroup ($M_s=3.69$ vs. $4.12, SD_s=1.29$ vs. $1.29, F(1,154)=4.40, p<.05$). In contrast to the results for explicit bias, there was no significant main effect of condition on implicit intergroup bias ($F<, n.s.$).

Mediation Analyses. This relationship between condition and explicit intergroup bias was mediated by perceived genetic similarity between Jews and Arabs. Initially, an AMOS SEM model was run to confirm the condition effect on explicit intergroup bias using the covariates chosen before, namely SES and experiences with other ethnic groups. Condition was coded in these mediation analyses so the similarity condition had the lowest numerical value, and the difference condition had the highest numerical value. As expected, the relation between condition and explicit intergroup bias was significant and the model had an excellent fit overall ($\chi^2(16)=7.22, ns, CFI=1.00, RMSEA=0.00$). Next, a model with constructed with perceived genetic similarity as a possible mediator. As before, the same covariates were chosen. The overall fit was again excellent ($\chi^2(19)=9.75, ns$). After the addition of perceived genetic similarity to the model, the direct path between condition and explicit intergroup bias became insignificant, suggesting that perceived genetic similarity mediates the relation between condition and explicit intergroup bias. The model is shown in Figure 2.

Moderation Analyses. There was no effect of condition effect on implicit intergroup bias $F_s < 1$, *ns*. Using a regression, implicit intergroup bias was explored as a moderator of the effect of condition on consciously reported explicit bias on each dimension individually and also on the combined explicit bias scale. Prior studies have suggested that implicit bias is less susceptible to experimental manipulation but may reflect longer lasting biases that might therefore moderate short term effects on explicit biases. To explore this possible moderation using regression, implicit intergroup bias was first centered and then an interaction term was created with the dichotomous condition variable. Overall, the condition effect, ethnicity, and the covariates of education, parent's income and experiences with other ethnic groups explained a significant proportion of variance in explicitly reported bias on the violence dimension, $R^2 = .20$, $F(5,153)=7.39$, $p < .001$. As expected the condition effect was a significant predictor with, $Beta = .15$, $t(153)=2.10$, $p < .05$. Beyond the variance explained by the condition effect, ethnic differences and the covariates, implicit intergroup bias and the interaction between condition and implicit bias explained an additional 5.4% of variance on the violence dimension (R^2 change = .05, $F(1, 150)=6.39$, $p < .05$). In particular, implicit intergroup bias significantly moderated the predicted effect of the manipulation on explicitly reported bias for the violent dimension, $Beta = .66$, $t(150) = 2.53$, $p < .05$. The moderation effects are diagrammed in Figure 3.

Moreover, a similar marginally significant moderating effect for implicit bias was evident on the unfriendly dimension with a $Beta = -.46$ ($t(150) = -1.73$, $p = .086$) for implicit bias and a $Beta = .49$ ($t(150) = 1.85$, $p = .066$) for the interaction between implicit bias and condition. A similar marginally significant moderation effect for implicit bias was also observed on total explicit bias ($Beta = .49$, $t(150) = 1.87$, $p = .064$) for the interaction between implicit bias and condition. Specifically, those who scored higher on implicit intergroup bias also reported more

total explicit bias when genetic differences were highlighted compared to those who initially scored lower on implicit intergroup bias.

Using an ANCOVA, Political orientation, skepticism and MEIM were also examined as possible moderators of the condition effect on the feeling thermometer. Political orientation was the only potential moderator with a significant moderating effect. Political orientation was first centered and then an interaction term was created with the condition variable. After the covariates of education level, parents' income, and experiences with other ethnic groups (MEIM) were accounted for, the interaction between political orientation and condition on explicitly reported total bias was significant, $F(1, 78)=4.36, p<.05$. As shown in Figure 4, those who are right-wing reported more conscious intergroup bias when genetic differences were highlighted compared to those who were left wing suggesting that those who are rightwing may be particularly influenced by information about genetic differences.

Conclusions. Together, these results provide initial evidence that highlighting genetic similarities (vs. difference) may be effective for reducing negative intergroup attitudes and, moreover, that this may be differentially affected by one's level of implicit intergroup bias and political orientation. Specifically, emphasizing differences may especially exacerbate intergroup bias among those who are high in implicit bias and who are politically right wing.

CHAPTER 3:

Reducing Behavioral Aggression (Study 2)

The aim of Study 2 was to examine whether emphasizing genetic commonalities (vs. differences) can also reduce behavioral intergroup aggression. This would not only provide insight into the behavioral implications of emphasizing genetic commonalities but, also the benefits of highlighting commonalities more broadly for reducing aggressive behaviors.

Participants

One hundred and thirty seven Jewish-Americans (63 males, 73 females; $M_{age}=19.52$ yrs, $SD_{age}=.84$) were recruited in exchange for course credit via subject pool pre-screening procedures at University of Michigan's Ann Arbor campus.

Thirty-five participants were discarded from all analyses because they did not recognize the opponent in the computerized dependent aggression task as an Arab. Thus, the final sample consisted of 102 college students (52 males, 50 females; $M_{age}=19.59$ yrs, $SD_{age}=.92$). Also, for certain analyses, 7 participants were discarded due to technical problems in the provoked trials (see below). Therefore, any analysis examining provoked trials has a reduced total of 95 participants (47 males, 48 females, $M_{age}=19.62$ yrs, $SD_{age}=0.94$).

Procedure

The present study was identical to Study 1 except, instead of completing the measures of attitudes after reading the article, participants completed the Competitive Reaction Time task – a

reliable and valid measure of aggression that has been used for decades (i.e. CRT; Taylor, 1967; Anderson & Bushman, 1997; Giancola & Zeichner, 1995). First, using a fake alleged random assignment procedure, participants were led to believe they had been paired with an opponent of the same gender who had the last name *Mohammed*. Then, participants were told that they and their alleged opponent would have to press a button as fast as they could on each of 9 trials and that whoever is slower would receive loud blasts of noise from the winner. In advance of each trial, participants set the level of noise their “opponent” would receive, from 60 dB (Level 1) to 105 dB (Level 10, about the same volume as a fire alarm). A nonaggressive no-noise option (Level 0) was also provided. They could also control how long their “opponent” suffered by setting the noise duration from 0 to 2.5 s. The alleged “opponent” set random noise levels throughout the task. After that task, all participants completed an implicit and explicit measure of state hostility, a measure of strength of identification (i.e. MEIM; see Study 1), a measure of trait aggression, the measure of perceived genetic similarity (see Study 1) and a demographic questionnaire. Finally, they were probed for general suspicion as well as knowledge of their alleged partners’ ethnicity using the recommended funnel interview procedure (Bargh & Chartrand, 2000).

Measures. In addition to the measures of perceived genetic similarity, political orientation and ethnic identification from Study 1, the following measures were also included:

Implicit state aggression was measured with a word completion task by Anderson (1999) that included 98 word fragments that have several possible correct completions. Fifty of the fragments can yield words that are clearly aggression-related. The measure of aggression is the proportion of fragments that were turned into aggressive words.

State Hostility was measured using a 10-item adapted version of Anderson, Deuser, and

DeNeve (1995) scale in which participants are asked to rate their current hostile feelings (e.g. *I feel like breaking things; I feel like swearing*) on a 4-point scale (1=Not at all, 4=very much so).

In our sample, the internal reliability was high ($\alpha=.85$).

Trait Aggression was measured with the 14-item reduced version of the Buss-Perry Aggression Questionnaire (1992) in which participants self-rated their aggressive tendencies (e.g. *Once in a while I can't control the urge to strike another person*) on a 7-point scale (1=extremely uncharacteristic of me, 7=extremely characteristic of me). In our sample, the internal reliability was high ($\alpha=.77$).

Results

Again, confirming the effectiveness of our manipulation, after controlling for age, religiosity, and experiences with other ethnic groups, participants agreed more with the statement that Jews and Arabs are genetically similar in the similarity condition than they did in the difference condition ($M_s=5.20$ vs. 4.44 , $SD=2.02$ vs. $.2.11$, $Std\ Errors=.22$ vs. $.23$, $t(84)=5.44$, $p<.05$).

Intergroup Aggression. Trial 1 on the Competitive Reaction Time task provides the best measure of unprovoked aggression because participants have heard no noise yet and, thus, they are unsure about what level of noise their partner will set for them. After Trial 1, aggression can be considered to be 'provoked' because the participant always loses trial 1 and hears a loud noise blast. Responding then generally converges on what participants believed their partner had done (i.e., tit-for-tat responding). This is consistent with many findings that confirm the importance of reciprocation norms in determining levels of aggressive behavior (Axelrod, 1984). Consistent with Bremner et al (2011), we thus examined unprovoked and provoked aggression separately.

A measure of Duration x Intensity was calculated for provoked and unprovoked trials. An ANOVA controlling for age, religiosity, and experiences with other ethnic groups was then run. Consistent with our predictions, in the unprovoked trial, Jewish participants who were made aware of their genetic commonalities (vs. differences) with Arabs showed lower aggression towards their Arab opponent $M_s = 15.52$ vs. 25.45 , $SD=29.93$ vs. 32.51 , $Std\ error = 3.25$ vs. 3.53 , respectively, $F(1,85) = 4.19$, $p < .05$, see Figure 5.

Mediation Analyses. Since there was a significant effect of the manipulation on the unprovoked trials, possible mediation by perceived genetic similarity was explored. However, perceived genetic similarity did not mediate the condition effect.

Moderation Analyses. Using an ANCOVA, Political orientation, gender and MEIM were examined as possible moderators of the condition effect on the CRT. Political orientation and MEIM both had a significant moderating effect.

As before, political orientation was first centered and then an interaction term was created with the condition variable. After the covariates of experiences with other ethnic groups (MEIM), religiosity and age were accounted for, political orientation significantly moderated the predicted effect of the manipulation on aggression, $F(1, 79)=8.94$, $p < .01$. As shown in Figure 6, those who are right wing demonstrated more intergroup aggression when genetic differences were highlighted compared to those who were left wing. This is in line with Study 1 and suggests that those who are rightwing may be particularly influenced by information about genetic differences.

MIEM was also centered and an interaction term was created with the condition variable. After the covariates of religiosity and age were accounted for, the interaction between MIEM and condition was significant, demonstrating that MIEM moderated the predicted effect of the manipulation on aggression $F(1, 80)=7.02$, $p=.01$. As shown in Figure 7, those who had less

experience interacting with other ethnic groups demonstrated more intergroup aggression when genetic differences were highlighted compared to those who had more experience.

Conclusion

Jewish-Americans who were made aware of their genetic commonalities (vs. differences) with Arabs showed less unprovoked behavioral aggression towards their Arab opponent suggesting that highlighting genetic similarities versus differences may lower high levels of unprovoked aggression towards outgroup members and, moreover, that this may be differentially affected by one's level of political orientation and experiences with other ethnic groups. Specifically, having differences emphasized may exacerbate intergroup aggression among those who have less experience with other ethnic groups and who are politically right wing.

CHAPTER 4:

Increasing Support for Israeli-Palestinian Peacemaking (Study 3)

The aim of Study 3 is to examine whether the genetic similarity-difference intervention might also impact support for Israel-Palestine peacemaking among Jewish-Americans as well as if this effect is mediated by explicit intergroup bias. Specifically, I explored whether emphasizing genetic commonalities (versus differences) would result in more positive attitudes toward the outgroup, and whether these more positive attitudes would, in turn, predict greater support for peacemaking. A secondary aim was to add a no-intervention, control condition in order to examine baseline levels of explicit intergroup bias and perceived genetic similarity.

Participants

222 Jewish-Americans (82 males, 139 females, 1 no-reports; $M_{age}=24.57$, $SD_{age}=9.69$) were recruited via various Jewish listservs from University of Michigan and within Jewish communities across the US. In exchange for participating in a “memory and distraction” study, participants were entered into a drawing for a \$100 Amazon gift card.

Procedure

The present study was identical to the previous studies except for three modifications: 1) the study was conducted online, 2) a no-intervention condition was added in which participants read about new BBC channels, 3) along with completing the measure of explicit intergroup bias, ethnic identity (i.e. MEIM) and perceived genetic similarity from Study 1, participants also rated their support for Israeli-Palestinian peacemaking.

Measures

Support for Israeli-Palestinian Peacemaking was measured using a 9-item adapted measure of Vail & Motyl (2010/2011) “Support for Peacemaking” scale in which Jews rated the extent to which Israel should pursue diplomatic actions towards Palestine and Arabs rated the extent to which Palestinian leadership should pursue peaceful diplomacy with Israel (e.g. *In order to achieve its goals, Israel/Palestine should pursue peaceful diplomacy with the Palestinians/Israelis instead of using aggressive actions*) on a 10-point scale (1=Strongly disagree, 7=Strongly agree). The scale had excellent internal reliability, $\alpha=.87$. See appendix A for full scale.

The other measures of explicit bias, skepticism toward the news article, religiosity, genetic similarity, and education used in Study 1 were also given to the participants.

Results

Level of skepticism towards the news article, religiosity and education were used covariates. Again, confirming the effectiveness of our manipulation, in the similarity versus difference condition, participants agreed more with the statement that Jews and Arabs are genetically similar ($M_s=6.00$ vs. 3.44 , $SD_s=2.50$ vs. 2.65 , $p<.001$). There was also a significant difference between the control ($M=5.50$, $SD=2.65$) and difference condition, $p<.001$ and the control and similarity condition, $p<.05$. There was an overall main effect of condition, $F(2,212)=53.27$, $p<.001$.

Explicit Intergroup bias. An ANOVA was conducted on the explicit measure of intergroup bias used in Study 1, controlling for education level, skepticism towards the news article and religiosity. It revealed a significant main effect of condition, $F(2, 207)=3.14$, $p<.05$, 14.73 . Post-hoc tests showed that there was less explicit negative bias overall toward the outgroup

($M_s=3.03$ vs. 3.69 , $SD_s=2.48$ vs. 2.62 , $p<.05$) in the similarity condition compared to the difference condition. The mean level of explicit bias for the control group was in between the other two groups ($M=3.22$, $SD=2.62$) but was not significantly different from either.

Support for Israeli-Palestinian Peacemaking. An ANOVA was conducted on the support for Israeli-Palestinian Peacemaking scale, after controlling for education level, skepticism towards the news article and religiosity. It revealed a marginally significant main effect of condition, $F(2, 211)=2.81$, $p=.06$. Post-hoc tests showed there was significantly more support for Israeli peacemaking with Palestinians in the similarity condition than in the difference condition ($M_s=6.65$ vs. 5.88 , $SD_s=3.32$ vs. 3.28 , $p=.02$). There was also a marginally significant difference between the similarity and control condition ($M=6.13$, $SD=3.41$, $p=.11$).

Mediation Analysis. Using bootstrapping the structural equation model shown in Figure 8 was estimated to test whether perceived genetic similarity mediated the effect of condition on explicit intergroup bias. Consistent with the ANOVA above, the total direct effect of condition alone on explicit intergroup bias was marginally significant, ($Beta=-.22$, $t(208)=-1.66$, $p=.09$). When the indirect path was added, the path between condition and perceived similarity was significant, $Beta=-.98$, $t(208)=6.82$, $p<.001$ as well as the path between perceived similarity and explicit negative attitudes, $Beta=-.19$, $t(208)=-3.12$, $p=.002$. Adding this indirect path, made the direct effect much less significant $Beta=-.02$, $t(208)=-.20$, *ns*. A bias-corrected bootstrap 95% CI indicated that the indirect effect was significant, effect = $.19$, 95% CI: $[-.38, -.05]$.

Again, using bootstrapping and the same mediators as before, the structural equation model shown in Figure 9 was constructed to test whether explicit intergroup bias mediated the effect of the similarity-difference manipulation on support for peacemaking (the control condition was excluded). Consistent with the ANOVA above, the total direct effect of condition alone on

support peacemaking was significant, (Beta=-.63, $t(189)=2.02$, $p<.05$). When the indirect path was added, the path between condition and explicit intergroup bias was significant, Beta=-.53, $t(189)=-2.15$, $p<.05$ as well as the path between explicit intergroup bias and support for peacemaking, Beta=-.25, $t(189)=-2.89$, $p<.01$. Adding this path, made the direct effect non-significant Beta=.49, $t(189)=1.60$, *ns*. A bias-corrected bootstrap 95% CI indicated that the indirect effect was significant, effect = .13, 95% CI: [.005, .381].

Moderation Analyses. MEIM (experiences with other ethnic groups subscale), skepticism and political orientation were examined as moderators of the condition effect on Support for Peacemaking and explicit negative outgroup attitudes. However, none had a significant moderating effect.

Conclusions

Together, these results provide evidence that highlighting genetic similarities (vs. difference) is effective for increasing Jewish-Americans' support for Israel's peacemaking with the Palestinians. Furthermore, this effect is mediated by a reduction in explicit intergroup bias produced by the similarity condition which in turn is mediated by an increased perception of genetic similarity that is demonstrated by participants in the similarity condition. The results also replicate the results of Study 1, which found that highlighting genetic similarities (vs. difference) reduces negative intergroup attitudes. Moreover, the control condition provides insight into the relative effectiveness of the similarity intervention on altering negative intergroup outcomes (e.g. negative attitudes and lack of support for peacemaking) and suggests that, while the similarity condition is more beneficial than the difference condition, that the similarity condition may not be strong enough to increase positive intergroup outcomes.

CHAPTER 5:

Increasing willingness to making political compromises (Study 4)

The aim of Study 4 was to examine the effectiveness of the genetic similarity manipulation within a context characterized by ongoing inter-ethnic conflict (Israel) and, moreover, whether the intervention would be effective outside the laboratory and when participants are going about their daily lives (i.e. riding a train). A secondary aim was to explore whether emphasizing shared genetic heritages in such a context could reduce negative intergroup outcomes such as unwillingness to make political compromises from peace, reduce political intolerance and lessen support collateral damage. I also explored whether the intervention could reduce self-reported aggression to the outgroup using hypothetical scenarios. Depending on what group was most relevant to the question being asked, the outgroup for Israeli-Jews was either Palestinian-Arabs (living the occupied territories) or Israeli-Arabs (living in Israel). Additionally, I explored the mediators of the effect using measures of *long-term emotional sentiment, hope about the Israeli-Palestinian conflict, group variability, de-humanization, and explicit Jewish-Arab bias*.

Finally, I also explored whether those with a more fixed view of groups would show a stronger reduction of negative intergroup outcomes when presented with the genetic similarity (vs. differences and no-intervention) information. Those who believe people's characteristics are fixed (vs. malleable) are more likely to attribute wrongdoing to a person's fixed qualities, more likely to recommend punishment, and less likely to recommend negotiation (Chiu, Hong &

Dweck, 1997; Chiu, Dweck, Tong & Fu, 1997). Moreover, this idea that groups (instead of individuals) cannot change has been found to influence the formation of social stereotypes (Rydell and colleagues (2007; see also Levy et al., 1998). Drawing on this understanding, Halperin et al. (2011) demonstrated the benefits of promoting beliefs about group malleability in the Middle-East conflict. This work showed that when Jewish-Israelis, Palestinian-Israelis, and Palestinians in the West Bank were led believe that group characteristics could be changed, they expressed more positive attitudes toward their outgroup in the conflict and, in turn, expressed more willingness to make concrete compromises with that outgroup during peace negotiations. Given that individuals who hold a more fixed view of groups may be more prone to viewing negative outgroup's differences as stemming from genetic factors, creating awareness of genetic similarities may reduce these genetic explanation and thus, have a greater impact on willingness for peace and political compromises for individuals with a more fixed (vs. malleable) view of groups.

Participants

177 Israeli-Jews (88 males, 80 females, 9 no-reports; $M_{age}=28.81$, $SD_{age}=12.67$) were recruited on trains from Tel Aviv to BeerSheva and Haifa (Northern and Southern Israel) in exchange for several small candies. Trains are used by a wide-population of Israelis and thus, provide a relatively representative sample of Israeli-Jews.

Procedure

The procedure was identical to that used in Study 3 except, prior to the manipulation, participants completed a measure of beliefs about group malleability. Moreover, following the manipulation, dependent variables were added that had relevancy to political issues that are critical to the Israeli-Palestinian conflict as well as to the negative attitudes and emotions held within a

context characterized by high conflict. All materials were translated into Hebrew and the control article used from previous studies (i.e. the BBC article) was altered to TV channels that were relevant to Israelis. After the manipulation, all participants then completed a set of questionnaires in which possible mediators and dependent measures were embedded, these included measures of *long-term emotional sentiments towards the outgroup*, *group variability*, *hope about the Israeli-Palestinian conflict*, *de-humanization of the outgroup*, *explicit Jewish-Arab bias* (adapted from Study 1), *support for political compromises*, *political intolerance*, *collateral damage* and *behavioral hostility towards Arab-Israelis*. Finally, all participants were debriefed.

Measures

Beliefs about group malleability was measured with 8-items scale adapted from Halperin et al., 2011 in which participants rated their beliefs about peoples' characteristics being flexible, with no items mentioning the Palestinians or the specific conflict (e.g. "As much as I hate to admit it, you can't teach an old dog new tricks— groups can't really change their basic characteristics", "Every group or nation has basic moral values and beliefs that can't be changes significantly") on a 6-point scale (1= Totally disagree; 6= Agree to a very large extent). The internal reliability among our sample was high, $\alpha=.80$.

Long-term emotional sentiments towards the outgroup were measured with a 7-item measure adapted from Halperin et al., 2011 asking participants to rate their general feeling when they thinking of Palestinians/Arabs, unrelated to any specific event (e.g. *Hatred towards the Palestinians/Arabs*; *Shame regarding Israel's behaviour towards the Palestinians/Arabs*) on a 6-point scale (1= Not at all; 6=To a very large extent). These emotions were looked at separately, rather than as a combined scale.

Group Variability was measured with a 3-item scale asking participants to rate their perception of variability within Palestinian/Arab populations (e.g. *Within Palestinian/Arab society, there are many different subgroups that hold different opinions, attitudes and values*) on a 6-point scale (1= Totally disagree; 6= Agree to a very large extent). The internal reliability among our sample was high, $\alpha=.81$.

Hope about Israeli-Palestinian conflict was measured with a 14-item scale asking participants to rate their hopefulness regarding the resolution of the Israeli-Palestinian conflict (e.g. *I am hopeful regarding the Solution of the Israeli-Palestinian conflict; I am always disappointed by attempts to resolve the conflict, so it's foolish to expect anything*) on a 6-point scale (1= Not at all; 6=To a very large extent). The internal reliability among our sample was high, $\alpha=.85$.

De-humanization of the outgroup was measured with a 1-item measure asking participants to rate the level of humanity they attribute to a typical Palestinian (e.g. *Psychological research shows that people are tent to attribute different humanity level for people from different group. This scale represents level of humanity of Palestinians*) on a 11 point scale from 0-100 (0= very little level of humanity; 100= high level of humanity).

Explicit Arab Bias was measured in the same way as Study 1 & 3, except participants rated the typical Palestinian/Arab. In addition, they rated an additional 5-bipolar dimensions that were expected to be particularly relevant to Israeli-Jews perceptions of Palestinians/Arabs (*Good-Evil, Clean-Dirty, Smart-Stupid, Merciful-Cruel, Trustworthy-Untrustworthy*). This created a 9-item measure of explicit intergroup bias. The internal reliability among our sample was high, $\alpha=.96$.

Support for political compromises was assessed with 4-items measuring the participants' support for various political compromises that Israel might make in order to achieve peace (1) *What is your opinion about signing a peace agreement with the Palestinians based on a two-state formula that would include withdrawing to the 1967 borders with various territorial exchanges?;* 2) *What is your opinion about signing a peace agreement with the Palestinians based on a two-state formula that would include various concessions regarding Jerusalem;* 3) *In return for the Palestinians willingness to promote the peace process, Israel should freeze building in the settlements;* 4) *After a peace settlement is achieved between Israel and the Palestinians, what is your opinion of the possibility of establishing economic and social relations between the nations?*) on a 6-point scale (1= Strongly oppose; 6=Strongly support). The internal reliability among our sample was high, $\alpha=.81$.

Political Intolerance was assessed on a 5-item scale measuring politically intolerant policies towards Israeli-Arabs/Palestinians (e.g. *Israeli Arabs/Palestinians should not be allowed to appear on TV or give speeches; Israeli Arabs/Palestinians ability to gain power in state institutions must be curtailed*) on a 6-point scale (1= Strongly oppose; 6=Strongly support). The internal reliability among our sample was high, $\alpha=.92$.

Support for Collateral Damage was assessed with a 3-item measure of support for imposing restrictions on Palestinian civilians in response to violence carried out by Palestinian leaders (e.g. *Israel should turn off the electricity in Gaza every time a missile lands in its territory*) on a 6-point scale (1= Strongly oppose; 6=Strongly support). The internal reliability among our sample was high, $\alpha=.74$.

Hostility towards Israeli-Arabs was assessed by having participants provide ratings of possible hostile reactions they might have to a typical Israeli-Arab in three different scenarios (1) *It is Friday afternoon and you are walking down the street, carrying lots of heavy grocery bags. Suddenly, an Israeli-Arab walking quickly behind you accidentally bumps into you, causing a few of your vegetables to fall out of your bags and onto the ground;* 2) *You are in a great hurry and right in front of you a car stops. An Israeli-Arab gets out but carries on talking to the driver. They don't hear your calls for them to move and you cannot get past the car.* 3) *You on the bus, on your way to an interview for a new job. An Israeli-Arab who is sitting in the seat next to you, accidentally spills their Soda on your newly cleaned clothes).* Hostile reactions were assessed by having participants rate 6-items (e.g. Frustrated, Like hitting someone) on a 5-point scale (0= Not at all; 5= Extremely). The internal reliability for each of the three scenarios ranged from $\alpha=.90 - .92$.

Results

As a manipulation check, an ANOVA was conducted to examine the effects of experimental condition on perceptions of genetic similarity. There was an overall main effect of condition, $F(2,170)=6.73, p<.01$. Again, confirming the effectiveness of our manipulation, post-hoc tests showed that participants in the similarity condition agreed more with the statement that Jews and Arabs are genetically similar than did participants in the difference condition ($M_s=4.89$ vs. 3.72 , $SD_s=1.64$ vs. $1.73, p<.001$). There was also a significant difference between the control ($M=4.56, SD=2.00$) and difference condition, $p=.02$. However, there was no significant difference between the control and similarity condition, *ns*. See Figure 10.

Support for Political Compromise. An ANOVA of the support for political compromise, after controlling for age and political orientation, was then conducted. There was a main effect of

condition, $F(2,158)=3.09, p<.05$). As seen in Figure 11, consistent with our hypotheses, a post-hoc pairwise comparison using an LSD test revealed greater support for political compromise in the similarity vs. difference condition ($M=3.47, SD=1.37$ vs. $M=3.12, SD=1.67, p<.05$) as well as greater support for compromises in the control ($M=3.55, SD=1.78$) vs. difference condition ($p<.05$). However, there was no significant difference between the similarity and control condition, *ns*. There were no significant main effects of condition on the other DVs (*Hostility towards Israeli-Arabs, Support for Collateral Damage, Political Intolerance, Explicit Arab Bias*).

Moderation Analyses. Political orientation, age, skepticism, Malleability and MEIM were examined as possible moderators of the condition effect on the support for political compromise. However, none had a significant moderating effect.

Mediation Analyses. A structural equation analysis similar to that shown in Figure 5 showed that perceived similarity did not mediate the condition effects on support for compromise. Political Intolerance, Explicit intergroup bias, Hope and Group Variability were also tested as possible mediators of the condition effect. However, none had a mediating effect.

Conclusions

These results provide evidence that highlighting genetic similarities (vs. differences) is effective for increasing Israeli-Jews' support for political compromises with the Palestinians. Moreover, the inclusion of a control condition provided insight into the strength of the genetic similarity and difference conditions and suggests that highlighting genetic differences may decrease support for making political compromises.

CHAPTER 6:

Increasing intergroup contact and willingness to provide humanitarian aid (Study 5)

It has been suggested that lack of motivation for intergroup contact is one of the key reasons why efforts to promote peaceful resolutions fail (Crisp et al., 2010). Therefore, a manipulation that increases this willingness might be extremely valuable for the promotion of peace. The aim of Study 5 is to conceptually replicate Study 4 using a different population (e.g. a representative sample of Israeli-Jews online) while examining whether emphasizing shared genetic heritages increases Israeli-Jews' willingness to interact with Palestinians. I also examine whether it can increase willingness to provide humanitarian aid to Palestinians. Like Study 4, I also explore the mediators and moderators of the effect using measures from the previous studies and new additional measures. Specifically, the Essentialist Beliefs Scale was added to assess whether implicit theories about the nature of personality characteristics might serve as a moderator similar to perceptions of group malleability and implicit intergroup bias. Moreover, sympathy regarding the economic situation of the Palestinian territories, perceived Jewish-Palestinian overlap and anxiety about the situation of Israel (i.e. intergroup anxiety) were added as potential mediators.

Finally, the variations by condition in specific emotions (e.g. shame, guilt) are examined. These emotions are both related to the regulation of moral behavior (**Tangney, 1996**). 1991) yet they are distinctly different from one another. While shame focuses a failure of the self ("who am I?), guilt centers on a failure in one's behavior ("what I did"; Lewis 1971; Tangney 1991;

Lindsay-Hartz, De-Rivera, and Mascolo 1995). Although shame tends to be viewed as less adaptive than guilt in an interpersonal context (Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996), recent research indicates that it is more adaptive than initially thought (e.g., de Hooge, Breugelmans, Zeelenberg, 2008; 2010). Moreover, in a group-based context, shame may motivate the reparation of their group's image (Schmader & Lickel, 2006b) and, moreover, it can predict promoting support for the harmed outgroups despite that the underlying motivation may be to repair the image of the ingroup (Brown & Cehajic, 2008; Brown et al., 2008). Therefore, an intervention that can increase group-based shame may result in beneficial intergroup outcomes.

Participants.

157 Israeli-Jews (74 males, 83 females; $M_{age}=42.78$, $SD_{age}=15.44$) were recruited through the internet by an experienced panel survey company (the Midgam Project) and participants received \$6.

Procedure.

The procedure was identical to Study 4 except the study was conducted online and different potential moderators, mediators and dependent variables were included. Like Study 4, I included the potential moderator of *group malleability* and the potential mediators of *long-term emotional sentiment*, *hope about the Israeli-Palestinian conflict*, *group variability* and *explicit Jewish-Arab bias* as well as the dependent variables of *support for political compromise*, *political intolerance*, *collateral damage*. In addition, one new potential moderator was included (i.e. *essentialist beliefs scale*), and three new potential mediators were included (i.e. *Sympathy regarding the economic situation of the territories*, *Jewish-Palestinian overlap*, *intergroup*

anxiety) and two new dependent measures were included (i.e. *willingness to interact with Palestinians, willingness to provide humanitarian aid to Palestinians*).

Measures.

In addition to the measures of *Support for Political Compromise, Political Intolerance, Support for Collateral Damage, Explicit Arab Bias, Beliefs about group malleability, Beliefs about group malleability*, the *MEIM* and *Group Variability*, the following measures were added:

Essentialist Beliefs Scale by Bastian & Haslam (2006) assessed implicit theories about the nature of personality characteristics, asking whether they are understood as underlying essences. This scale included 7-items (e.g. *There are different ‘types’ of people and those ‘types’ can be easily defined and are relatively clear-cut*) and are rated on a 7-point scale (1=Not at all true; 7=Completely true). In our sample, the internal reliability was high $\alpha=.86$.

Hope about Israeli-Palestinian conflict was measured with a 4-item scale (reduced from the 14-item version in Study 4) asking participants to rate their hopefulness regarding the resolution of the Israeli-Palestinian conflict (e.g. *I am hopeful regarding the Solution of the Israeli-Palestinian conflict; I am always disappointed by attempts to resolve the conflict, so it's foolish to expect anything*) on a 6-point scale (1= Not at all; 6=To a very large extent). The internal reliability in our sample was high, $\alpha=.89$.

Group-Based Shame was assessed using an adapted version of Halperin et al., 2011 in which participants were asked to rate their “*Shame regarding Israel's behaviour towards the Palestinians/Arabs*” on a 6-point scale (1= Not at all; 6=To a very large extent).

Sympathy & Compassion regarding the economic situation of the territories was assessed by asking participants to rate 2-item on a 6-point scale (1= Not at all; 6=To a very large extent) their level of sympathy (1-item) and compassion (1-item) to the about the economic and

financial situation of the Palestinians in the West Bank (i.e. *Unrelated to your political position, when you think about the about the economic and financial situation of the Palestinians in the West Bank, how do you feel?*). The internal reliability in our sample was high, $\alpha=.87$.

Jewish-Palestinian overlap was assessed with the Inclusion of Other in the Self (IOS) measure by Aron et al. (1992) in which participants indicate which of seven Venn diagram-like pairs, varying on level of overlap, best represent the closeness between Arabs/Palestinians and Jews.

De-legitimization assessed internalization of delegitimizing societal beliefs about Palestinians using a 6-item adapted measure of Hammack et al.'s (2011) Delegitimization scale. Example items include “*To what extent do you agree with the saying that Palestinians are an inferior race of humans?*”). The internal reliability in our sample was high, $\alpha=.87$.

Intergroup anxiety about Israel society was assessed with 5-items about their anxiety about the future of Israeli society (e.g. *I feel secure about the future of the Israeli society*) on a 6-point scale (1= Totally disagree; 6= Agree to a very large extent). The internal reliability in our sample was high, $\alpha=.86$.

Willingness to Interact was assessed by telling participants that in the following weeks we would be carrying out a study in which we bring Israeli-Jews and Palestinians together to discuss the possibility of resolving the conflict. Participants were then be asked to rate the extent to which they would prefer to have a Palestinian or Israeli-Jew as a conversation partner. This measure was adapted from that used by Halperin et al. (2012).

Weliness to provide Humanitarian Aid to Palestinians was assessed with 2-items asking how much participants agree with the following actions on a 6-point scale (1= Strongly oppose; 6=Strongly support): 1) Allowing the transfer of food and medicine to innocent Palestinians; 2)

Providing medical care to injured Palestinian women and children in Israeli hospitals. The internal reliability in our sample was high, $\alpha=.87$.

Results.

As a manipulation check, an ANOVA was conducted to examine the effects of experimental condition on perceptions of genetic similarity. There was an overall main effect of condition, $F(2,146)=10.47, p<.001$. Again, confirming the effectiveness of our manipulation, post-hoc analyses revealed that participants in the similarity condition agreed more with the statement that Jews and Arabs are genetically similar than did participants in the difference condition ($M_s=4.24$ vs. 2.66 , $SD_s=1.89$ vs. $1.45, p<.001$). There was also a significant difference between the control ($M=3.58, SD=1.93$) and difference condition with people in the difference condition agreeing with the statement less, $p=.01$ and a marginally significant difference between the control and similarity condition with people in the similarity condition agreeing with the statement more, $p=.07$.

Political orientation effected perceptions of genetic similarities between Jews and Arabs with those who are right wing perceiving the groups as significantly more genetically dis-similar than those who were left wing (4.14 vs. 2.77), $F(1, 145)=22.21, p<.001$.

Willingness to interact with and contribute aid to Palestinians. An ANOVA was conducted to examine the effect of the similarity-difference manipulation on willingness to interact with Palestinians and willingness to contribute to humanitarian aid for Palestinians. However, no significant effects of condition were found, $F_s<1$.

Group-Based Shame about treatment of Palestinians. An ANOVA was conducted to examine the effect of the manipulation on shame about the treatment of the Palestinians. There was an overall main effect of condition, $F(2,141)=3.09, p<.05$. Post-hoc analyses showed that,

controlling for age, family income and family education, participant in the similarity condition felt more shame about Israelis' treatment of the Palestinians than did participants in the difference condition ($M_s=3.07$ vs. 2.40 , $SD_s=1.50$ vs. 1.43 , $p<.01$). There was also a marginally significant difference between the control ($M=2.90$, $SD=1.37$) and difference condition with people in the difference condition agreeing with the statement less, $p=.08$. There was no significant difference between the similarity and control condition. Finally, condition did not have an effect on any of the other dependent variables.

Mediation Results. A structural equation modeling analysis similar to that shown in Figure 5 revealed that the effect of condition the effect on shame was not mediated by perceived genetic similarity between Jews and Arabs.

Moderation Results. Using an ANCOVA, Political orientation, Essentialism, Malleability, age, skepticism and MEIM were examined as possible moderators of the effect of condition on willingness to interact with Palestinians and willingness to contribute to humanitarian aid for Palestinians.

First, an examination of whether the degree of skepticism about the article varied by condition, demonstrated that there was no significant difference $F(2, 155)=.20$, ns . This suggests that people were not more skeptical of the difference article than the similarity article. To then examine it's moderating effect, skepticism was first centered and then an interaction term was created with the dichotomous condition variable. After the covariates were accounted for, the interaction between skepticism and condition significantly moderated the predicted effect of the manipulation on willingness to contribute to humanitarian aid for Palestinians, $F(2, 138)=7.84$, $p<.01$. Moreover, there as significant effect between the similarity and control condition ($F(1, 89)=4.32$, $p<.05$) and a marginally significant effect between the difference and control condition

($F(1, 89)=2.34, p=.12$). As seen in Figure 12, those who scored low on skepticism also reported more willingness to provide humanitarian aid when genetic similarities (vs. control and differences) were highlighted whereas those who scored high on skepticism reported greater willingness to provide aid when differences (vs. similarities and control condition) were emphasized. This suggests that the intervention may be most effective for those who are low in skepticism.

Moreover, even though there was no main effect of condition on support for compromise, there was a moderated effect of skepticism ($F(2, 138)=10.55, p<.001$.) which showed the same pattern as willingness to contribute to humanitarian aid for Palestinians (see Figure 13). People with low skepticism reported more willingness to compromise when genetic similarities were highlighted while those with high skepticism reported less willingness. Moreover, there was a marginally significant effect between the similarity and control condition ($F(1, 89)=2.35, p=.12$) and a significant effect between the difference and control condition ($F(1, 89)=5.69, p=.02$) on support for compromise.

After the covariates were accounted for, the analyses showed that malleability also significantly moderated the predicted effect of the manipulation on willingness to contribute to humanitarian aid for Palestinians, $F(2, 138)=3.64, p<.05$. Moreover, there was a significant effect between the similarity and control condition ($F(1, 89)=5.02, p=.02$) and a marginally significant effect between the difference and control condition ($F(1, 89)=6.81, p=.01$). As seen in Figure 14, for highly malleable people both the similarity and difference condition lowered willingness to provide humanitarian aid while for low malleable both increased willingness.

After the covariates were accounted for, the interaction between malleability and condition also significantly moderated the predicted effect of the manipulation on willingness to

interact with Arabs. Although the interaction with condition was only marginally significant, $F(2, 138)=2.10$, $p=.12$, there was a significant effect between the similarity and control condition ($F(1, 89)=4.39$, $p=.03$) and a non-significant effect between the difference and control condition ($F(1, 89)=1.58$, *ns*). As seen in Figure 15, both conditions influenced high malleables to reduce their willingness to interact with Arabs while both conditions influenced low malleables to increase their willingness.

Finally, after the covariates were accounted for, the interaction between political orientation and condition significantly moderated the predicted effect of the manipulation on support for compromise. Although the interact with all conditions was only marginally significant, $F(2, 138)=2.42$, $p<.09$, there as significant effect between the difference and control condition ($F(1, 89)=4.13$, $p<.05$) and a non-significant effect between the difference and control condition, $F<1$, *ns*. As seen in Figure 16, the similarity condition increased support for compromise among right-leaning subjects while it decreased it for left-leaners.

Conclusions

The hypothesized effect of the similarity-difference manipulation on willingness to interact or willingness to contribute to humanitarian aid was not found. However, the results of this study provide evidence that highlighting genetic similarities (vs. differences) is effective for increasing Israeli-Jews' level of shame towards the treatment of Palestinians. The group-based emotion of shame has been suggested to be motivating in increasing positive intergroup behaviors and thus, may have important implications for promoting prosocial actions towards the outgroup. Moreover, results suggest that for those low in skepticism toward the news article, the similarity (vs. difference) condition also increases support for political compromises and --

CHAPTER 7:

Uniqueness of emphasizing genetic commonalities (Study 6)

The aim of Study 6 was to determine what makes emphasizing genetic commonalities effective and whether it has a larger effect on intergroup outcomes than emphasizing commonalities on less scientific and non-genetic dimensions. A secondary aim was to examine whether the genetic manipulation can alter Jewish-Americans attitudes not just towards Arab-Americans but, also towards Palestinians.

It was hypothesized that genetic similarities should be more effective than other kinds of commonalities for three main reasons: 1) its deeply "scientific nature", 2) it allows for a "critical level of distinctiveness" by focusing on a singular similarity, 3) it reduces genetic explanations for unfavorable group differences by getting individuals to think of outgroup members as belonging to one larger genetically-related group. In order to test this hypothesis, I created two new manipulations that also focus on a singular similarity and, allow for a critical level of distinctiveness, but that should not reduce genetic explanations for unfavorable group differences and that vary on how scientific they are. This should provide insight into what makes the genetic similarity manipulation effective. Specifically, I manipulate the perception that Jews and Arabs either share (or do not share) a rare fingerprint type (Scientific Distinctive Singularity) using an adapted version of the procedure used by Konrath, Bushman & Campbell, 2006 and Burger et al., 2004 as well as the perception that Jews and Arabs share a common (vs. different) preference in

popular music (Non-Scientific Distinctive Similarity). Note that neither of these manipulations should counteract the tendency of participants to ascribe ethnic differences to genetics.

Participants. 258 Jewish-Americans (125 males, 133 females; $M_{age}=18.53$, $SD_{age}=.68$) were recruited through the University of Michigan, Ann Arbor subject pool.

Procedure. The procedure was closely modeled after Study 1, however, a 3x2 design was used with one independent variable being whether the article focuses on genetics, fingerprints or musical tastes and the other being whether the article promotes perceptions of similarity or difference on the chosen dimension (see appendix B for the articles). Following this, participants completed the measures of explicit intergroup attitudes from Study 1 as well as measures from the other studies including *Jewish-Palestinian overlap* (from Study 5) and *emotions towards Palestinians* were added as well as the dependent variables of *support for Israeli-Palestinian peacemaking* (from Study 3), *support from political compromise* (from Study 4&5) as well as *willingness to interaction with and provide humanitarian aid to Palestinians* (from Study 5). *Ethnic Identification with Jewish and American cultures* was also included covariate as well as a manipulation check that not only assessed perceived genetic similarities but, also, perceived musical and finger-print similarities between Jews and Arabs.

Measures. The measures that were unique to Study 6 included:

Explicit Arab-American and Palestinian Bias was measured using an expanded version of the measure used in Study 1. This included the original 4-bipolar dimensions (Peaceful-Violent, Friendly-Unfriendly, Mean-Nice and Helpful-Harmful) from Study 1 along with 2 new dimensions (Merciful-Cruel, Trustworthy-Untrustworthy). Moreover, participants rated both Arab-Americans and Palestinians. The reliability of the 6-dimensions in this sample was good, $\alpha=.73$ and $\alpha=.77$, respectively.

Emotions towards Palestinians were assessed by asking participants to indicate how they feel when they think of Palestinians by having them rate 8 different emotions (e.g. respect, guilt, anger) on a 7-point scale (1=Not at all; 7=Very much).

Ethnic Identification was assessed by asking participants to rate their level of identification with American and Jewish culture on 4-items per identity (e.g. I see myself as American/Jewish) on a 7-point scale (1=Strongly disagree, 7=Strongly agree). The internal reliability for both the American ($\alpha=.90$) and Jewish subscales (.94) was high.

Perceived Genetic, Musical and Finger-print Similarity was examined by asking participants to rate on a 7-point scale (1=Strongly Disagree, 7=Strongly Agree) how much they agreed with the following 3 statements: 1) "Jews and Arabs are genetically similar"; 2) "Jews and Arabs share a rare fingerprint type"; 3) "Jews and Arabs have common preferences in popular music ". This served as a manipulation check.

Results. As a manipulation check, an MANOVA was conducted to examine the effects of the six experimental conditions on perceptions of genetic similarity, perceptions of fingerprint similarity, and perceptions of musical similarity. There was an overall main effect of condition, $F(15,690.541)=27.35, p<.001$, Wilk's $\Lambda = 0.076$, partial $\eta^2 = .58$.. Condition had a significant effect on perception of genetic similarity ($F(5, 252) = 27.12; p < .001$; partial $\eta^2 = .35$), perception of fingerprint similarity ($F(5, 252) = 95.73; p < .001$; partial $\eta^2 = .65$) and perception of musical similarity ($F(5, 252) = 104.31; p < .001$; partial $\eta^2 = .64$).

As shown in Figure 17, confirming the effectiveness of our manipulation, post-hoc analyses revealed that participants in the *genetic similarity* condition agreed more with the statement that Jews and Arabs are genetically similar than did participants in the *genetic difference* condition ($p<.001$). Interestingly, those in the *fingerprint similarity* condition also

agreed significantly more with the statement that Jews and Arabs are genetically similar than did participants in the *fingerprint difference* condition ($p < .001$). Moreover, there was also significant difference between both the *fingerprint similarity* and *genetic similarity* conditions ($p < .001$) and between the *fingerprint difference* and *genetic difference* condition in perception of genetic similarities. However, there was no difference in agreement with genetic similarities in the musical similarity versus difference condition, *ns*.

Post-hoc tests also revealed that participants in the *fingerprint similarity* condition agreed more with the statement that Jews and Arabs share a rare fingerprint type than those in the *fingerprint difference* condition ($M_s = 6.08$ vs. 1.76 , $SD_s = .83$ vs. 1.03 , $p < .001$). Those in the *musical similarity* condition also agreed with the statement about fingerprint similarity more than those in the *musical difference* condition ($M_s = 2.86$ vs. 2.35 , $SD_s = 1.32$ vs. 1.25 , $p < .03$). Moreover, Participants in the *genetic similarity* condition agreed with the statement that Jews and Arabs share a rare fingerprint to a marginally significant extent more than those in the *genetic difference* condition ($M_s = 2.50$ vs. 1.93 , $SD_s = 1.20$ vs. 1.26 , $p < .06$).

Finally, post-hoc tests also demonstrated that in the musical similarity condition people agreed more with the statement that Jews and Arabs share a common preference in popular music preference than those in the musical difference condition ($M_s = 6.59$ vs. 1.61 , $SD = .63$ vs. 1.06 , $p < .001$). Interesting, there was actually less of a perception of popular music similarity in the fingerprint similarity than the fingerprint difference condition ($M_s = 3.15$ vs. 3.71 , $SD_s = 1.22$ vs. 1.10 , $p < .01$) and no significant difference in perception of popular music similarity between the genetic similarity and genetic difference condition, ($M_s = 3.21$ vs. 3.23 , $SD_s = 1.39$ vs. 1.38) *ns*. Thus, we can conclude that all three manipulations worked as designed, but they had some spill-over effects with biological information having the greatest influence.

Explicit Intergroup bias. An ANOVA on the explicit measures of intergroup bias, after controlling for factors related to SES (i.e. and parents' income), religiousness, political orientation and experiences with other ethnic groups, was then conducted. In a conceptual replication of Study 1, participants in the genetic similarity (vs. genetic difference) condition displayed less explicit negative bias toward Palestinians ($M_s=3.85$ vs. 4.48 , $SD_s=.81$ vs. 1.21), $F(1, 56)=5.27$, $p<.05$. However, potentially due to the significantly smaller cell size, the condition difference on explicit negative attitudes towards Arab-Americans did not replicate the results found in Study 1 and there were no significant difference found.

An ANOVA with all six groups was then conducted on explicit negative attitudes towards Palestinians. As shown in Figure 18, although there was no overall main effect of condition ($F(5, 235)=1.36$, ns), post-hoc test revealed a significant difference between the genetic similarity and difference condition ($p<.05$) yet no significant difference between the musical similarity and musical difference condition (ns) nor the fingerprint similarity and fingerprint difference conditions (ns). Moreover, there was less explicit bias towards Palestinians in the genetic similarity condition versus both the fingerprint similarity ($p=.05$) and musical similarity conditions ($p=.09$). This suggests that emphasizing genetic commonalities may be most effective for reducing intergroup bias and, moreover, that it is distinct from an emphasis on other commonalities.

Conclusions. The results suggest that emphasizing genetic commonalities may in fact be more effective for increasing positive intergroup attitudes than emphasizing commonalities on less scientific and non-genetic dimensions (fingerprint and musical similarities). Moreover, although the fingerprint similarity-difference dimension altered the perception of genetic similarities, it was found to be distinctive and less powerful than the genetic similarity-difference

manipulation. Furthermore, the results suggest that the genetic manipulation can alter Jewish-American's attitudes not just towards Arab-Americans but also towards Palestinians.

CHAPTER 8: General Discussion

In six studies, I found support for the hypothesis that the genetic similarity-difference dimension impacts intergroup outcomes. When genetic commonalities versus genetic difference were emphasized, Jewish-Americans and Arab-American demonstrated less explicit outgroup bias (Study 1). Jewish-Americans who were made aware of their genetic commonalities (vs. differences) with Arabs also showed less behavioral aggression towards Arab-Americans (Study 2) and more support for Israel's peacemaking with the Palestinians (Study 3). Moreover, Israeli-Jews showed more support for political compromises related to the Israeli-Palestinian conflict (Study 4) and more shame regarding Israel's treatment of the Palestinians (Study 5). Finally, the genetic similarity-difference dimension was found to have more of an impact on intergroup bias than other similarity-difference dimensions (i.e. fingerprint and musical similarities and differences), suggesting that altering the perception of genetic relatedness has a uniquely powerful effect.

The present research provides the first demonstration of how emphasizing ethnic groups' shared and different genetic heritages impacts intergroup outcomes. Furthermore, it contributes understanding to the effectiveness of highlighting commonalities more broadly for contexts engaged in violent conflict as well as for reducing behavioral aggression and improving support for political compromises. Currently, there is limited research examining the effectiveness of emphasizing commonalities, of any kind, on behavioral and political outcomes as well as in

diverse contexts. Using the genetic commonality-difference dimension, this research provides insight into the effectiveness of the *Common Ingroup Identity Model* on factors that are directly related to sustaining conflict and promoting peace.

The present research indicates that emphasizing genetic similarities and difference may have a uniquely powerful impact on intergroup outcomes. I hypothesized that emphasizing genetic commonalities could generate particularly effective intergroup outcomes since it highlights a deeply-rooted similarity and thus, allows a sufficient level of intergroup distinctiveness to be maintained (Tajfel & Turner, 1979). Genetic information may also be particularly persuasive given its level of credibility and highly scientific-nature (Dar-Nimrod and Heine, 2011). Moreover, emphasizing genetic commonalities may reduce the harmful genetic explanations that can exacerbate intergroup conflict. Finally, people have an evolutionarily-based preference for those who share their genes (Hamilton, 1964; Dawkins, 1976; Wilson, 1975; Colman et al, 2012).

Although the present research does not isolate which of these specific factors makes genetic information effective, it does indicate that genetic similarities may be uniquely effective in promoting positive intergroup outcomes. Like the genetic similarity manipulation, the fingerprint and musical similarity conditions also focused on a singular similarity and thus, should be allowing for high level of intergroup distinctiveness to still be maintained. However, the genetic similarity-difference dimension was the only dimension that was able to alter negative outgroup bias. Moreover, it was found to increase the perceived genetic relatedness of Jews and Arab more than emphasizing either fingerprint or musical similarities. This suggests that there may be something uniquely powerful about emphasizing genetic commonalities and differences. Future research should explore what specific factors drive this effect.

In several studies, a control condition was also added to examine the strength of the genetic similarity and difference manipulations. Given a strong difference between the genetic difference and control condition, the results suggest that emphasizing genetic differences may be particularly harmful for exacerbating negative intergroup outcomes. Since emphasizing genetic differences has been a tactic used in genocides such as the Holocaust (see United States Holocaust Memorial Museum. "The Holocaust." *Holocaust Encyclopedia*), awareness of these potential consequences might be useful in designing appropriate responses to the spread of propaganda about genetic differences during ethnic conflicts and genocides.

In the present research, there was a non-significant variation between the genetic similarity and control condition in the perception of genetic relatedness between Jews and Arabs and, moreover, this pattern was often maintained when examining the intergroup consequences. This may be due to several factors including that people may already have a high base-line level of awareness about genetic similarities and, therefore, it may be more difficult to alter the perception of genetic relatedness than it is to alter their perception of genetic differences. While information about genetic similarities between Jews and Arabs may be expected, information about genetic differences between these groups may be highly unexpected and surprising. Therefore, in order to increase peoples' preexisting perceptions of genetic relatedness between Jews and Arabs, the current genetic similarity intervention may need to indicate that the degree of overlap for between Jews and Arabs is even greater than initial expectations. The lack of variation between the similarity and control conditions might also be due to the similarity intervention lacking persuasiveness. Future research should consider creating a new genetic similarity intervention that provides specific data on the degree of genetic overlap between Jews and Arabs. Increasing the perceived scientific-level of the intervention may also be beneficial by increasing credibility of the

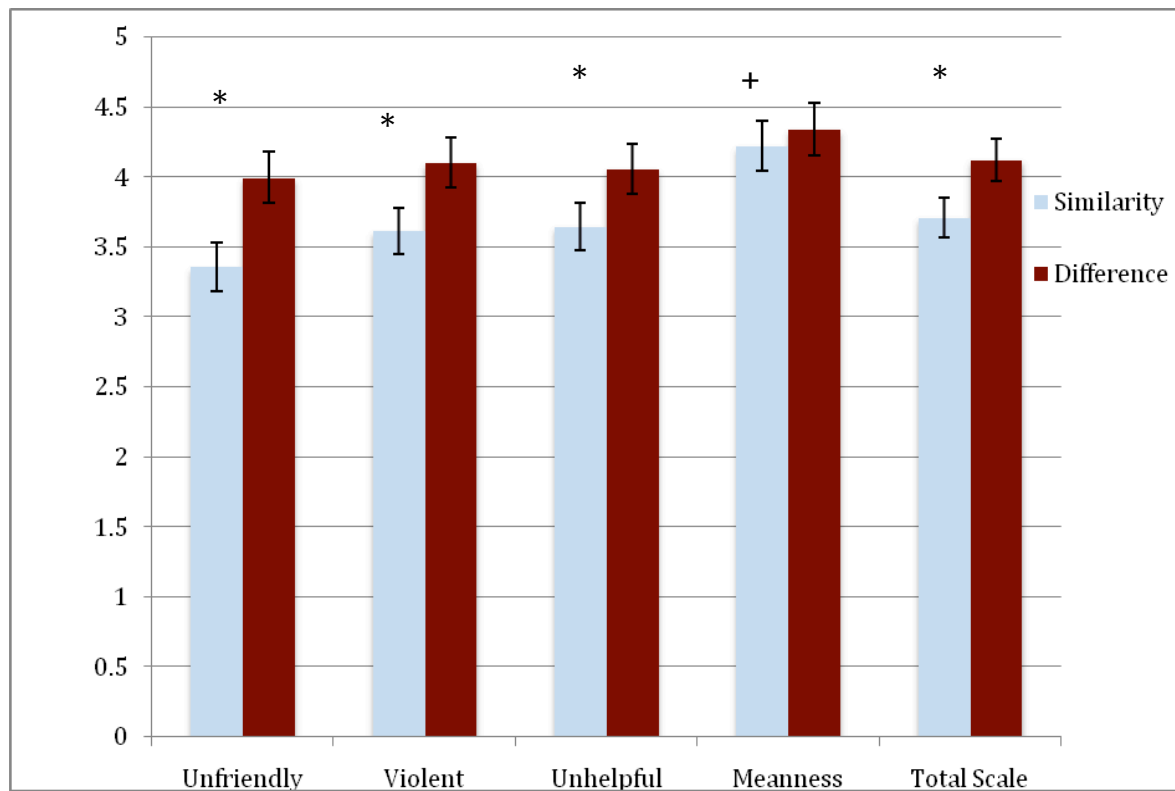
article. Adding figures as well as arguments and counter-arguments may also help to increase the persuasiveness of this information.

The present research examines the effectiveness of the genetic similarity-difference intervention within three different cultural groups—Jewish-Americans, Arab-Americans and Israeli-Jews. Although the results suggest that this intervention has similar effects across these cultures, follow-up research should also explore the effectiveness for Palestinians living in the West-Bank. Comparing these results with those found among Israeli-Jews may provide insight into how the processes might be different for minority and majority group members. The present research indicates the short-term consequences of emphasizing genetic similarities and differences. However, follow-up studies should examine the long-term effects of presenting people with this information. Efforts to create a workshop intervention that trains people about genetic similarities may be particularly effective.

This intervention may have an impact on the relationships between other ethnic groups in conflict. There is long history of conflict between numerous other groups who share genetic similarities including English and Irish, Serbians and Croatians, Indians and Pakistanis, Armenians and Turks, and Japanese and Koreans. However, this tool may also be effective with groups who share fewer perceived genetically similarities. Genetic research suggests that there is more DNA variation within than between racial groups (Lewontin 1972; Jorde et al. 2000a; Hinds et al. 2005). Fostering awareness of this information may, therefore, be useful for groups who perceive themselves to be less genetically similar (e.g. African-American and European-Americans). Taken together, this intervention has the potential to serve as a model for addressing intractable and violent conflicts not just within the Middle East but also throughout the world.

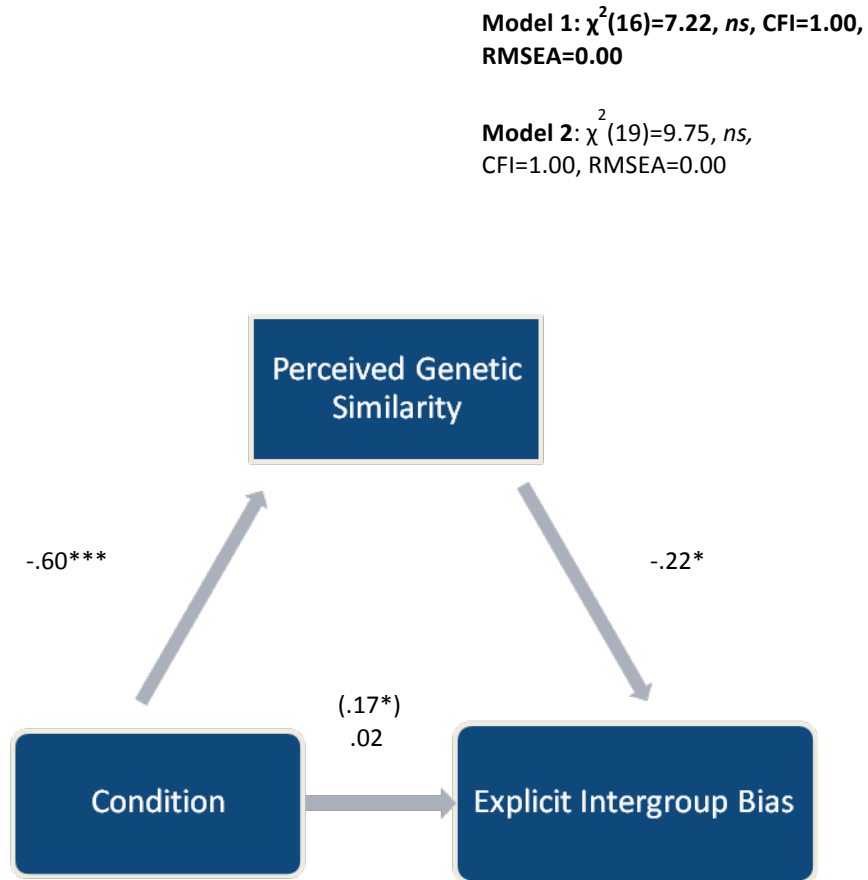
These results of the present series of studies suggest that emphasizing genetic commonalities and differences between ethnic groups in conflict may have a powerful impact on interethnic relations. This research not only provides important theoretical insight but, more importantly, it provides insight into a potentially highly valuable tool for understanding how ethnic conflict can be reduced and exacerbated. Moreover, a strong genetic commonality intervention (e.g., not requiring that people from both groups come together) may allow individuals and societies to overcome powerful psychological obstacles that have previously stood in the way of peace.

Figure 1. Total explicit intergroup bias as a function of experimental condition (Study 1).



*=significant below .05, +=marginally significant

Figure 2. Mediation of perceived similarity on relationship between condition and explicit intergroup bias (Study 1)



*=significant below .05, **= significant below .01, ***=significant below .001

Figure 3. Low-High implicit bias as moderator of the effect of experimental condition on the violence subscale (Study 1)

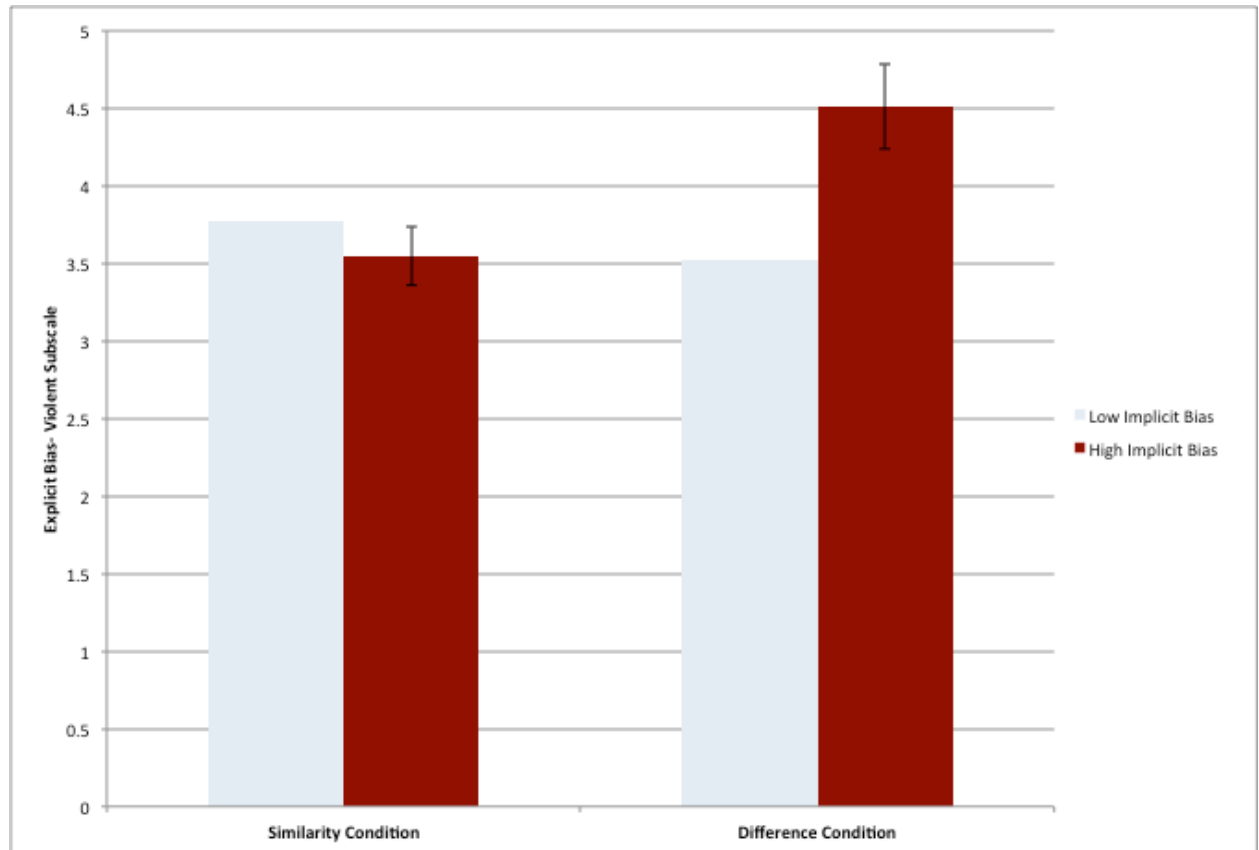


Figure 4. *Left-Right Political Orientation as moderator of the effect of experimental condition on explicit intergroup bias (Study 1)*

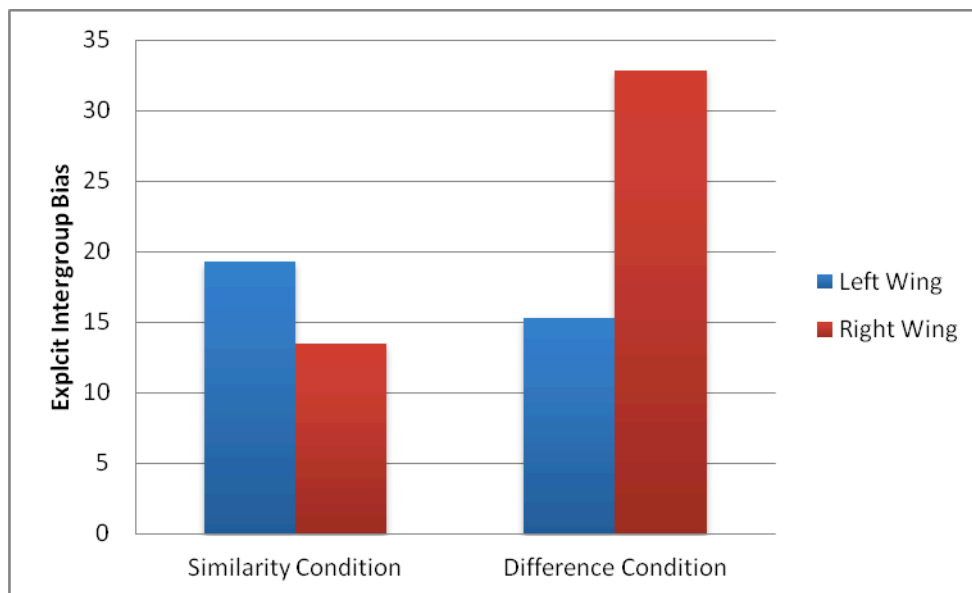
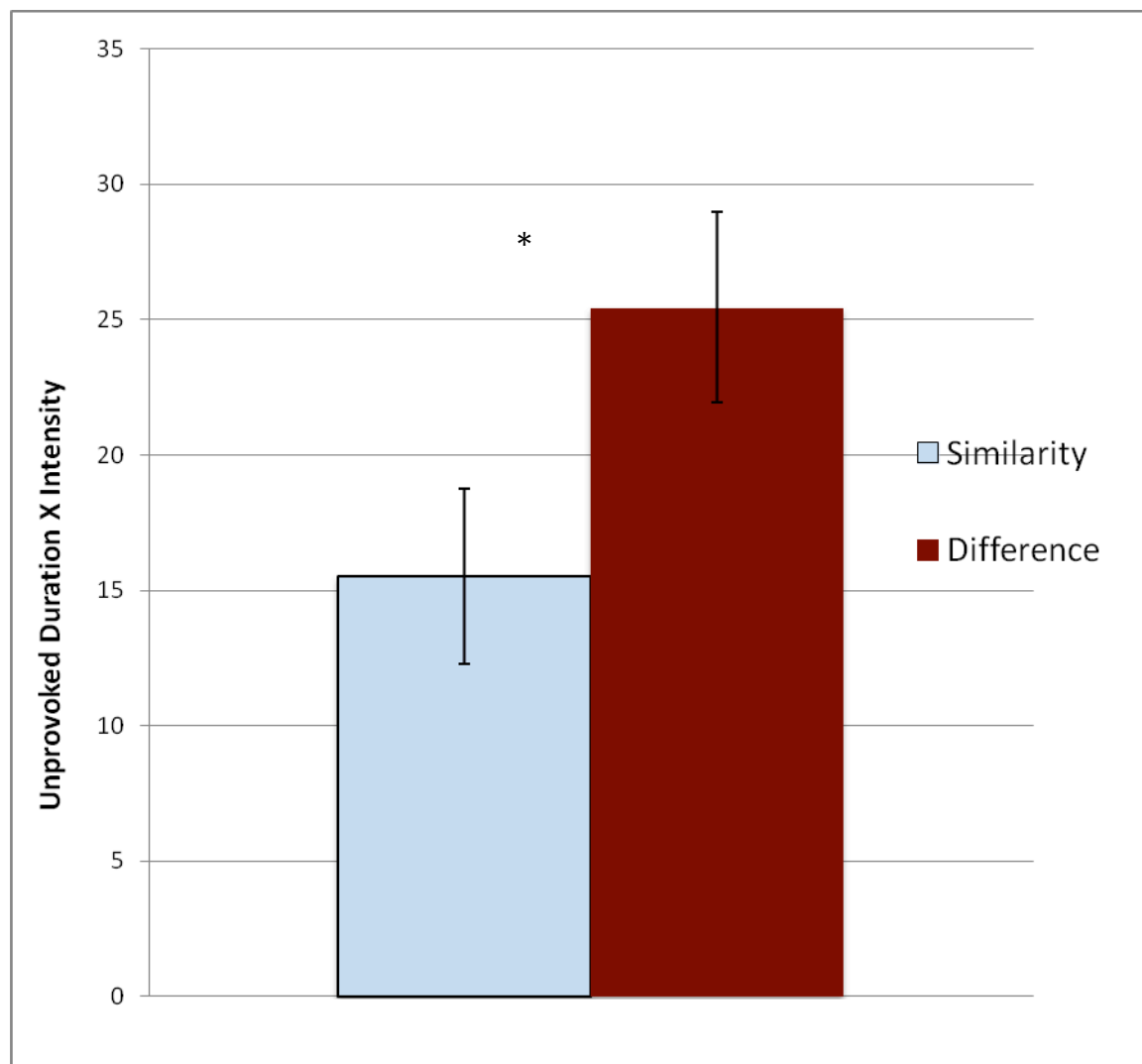


Figure 5. *Unprovoked aggression (Duration X Intensity) as a function of experimental condition (Study 2)*



*=*significant below .05*

Figure 6. Left-Right Political Orientation as moderator of the effect of experimental condition on aggression (Study 2)

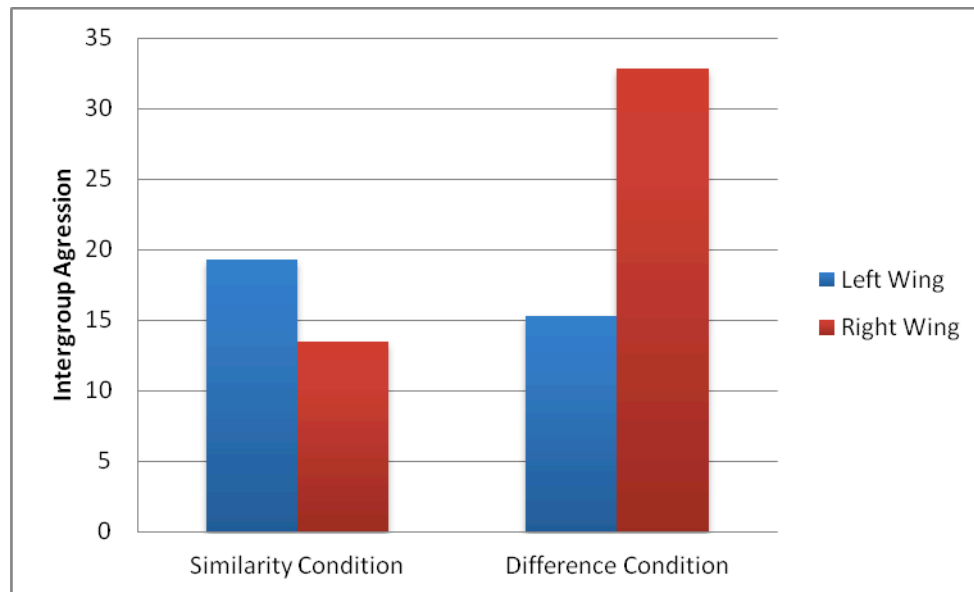


Figure 7. MEIM as moderator of the effect of experimental condition on aggression (Study 2)

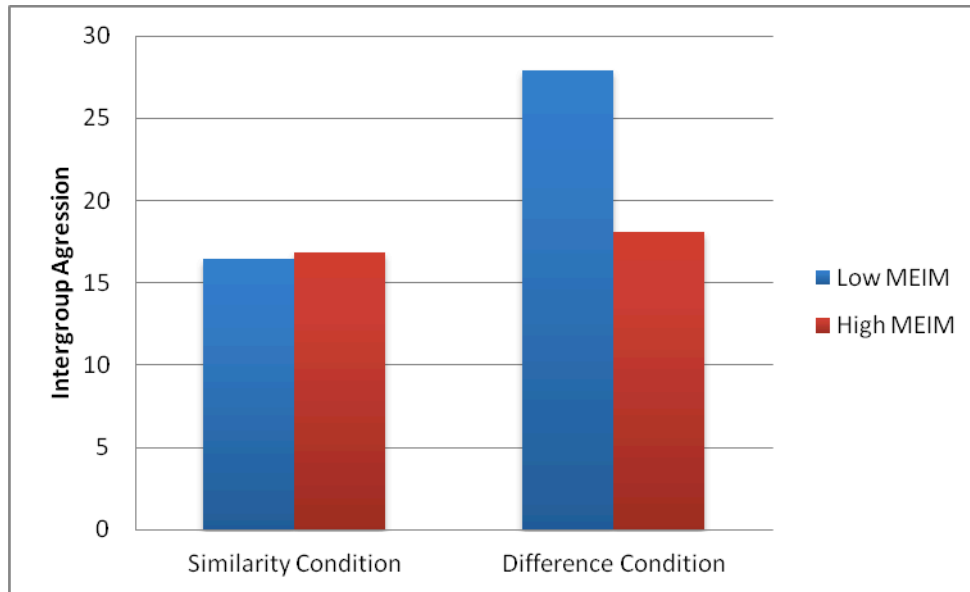
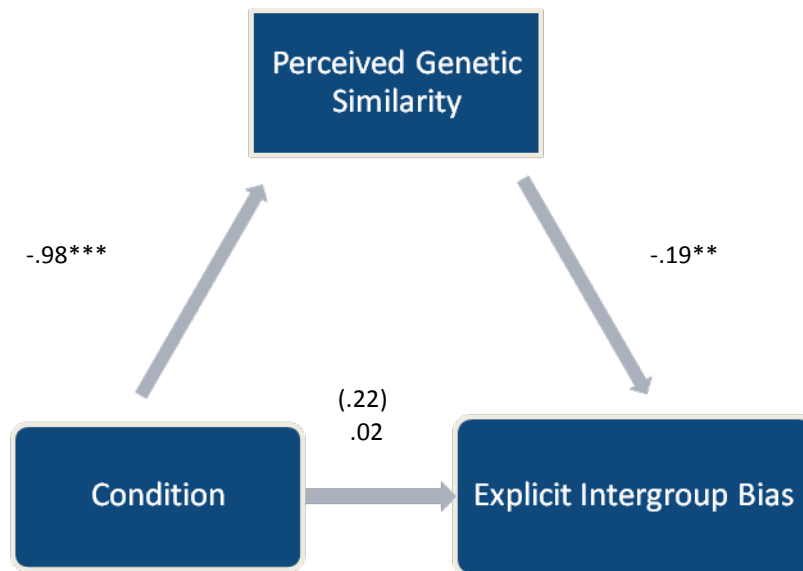
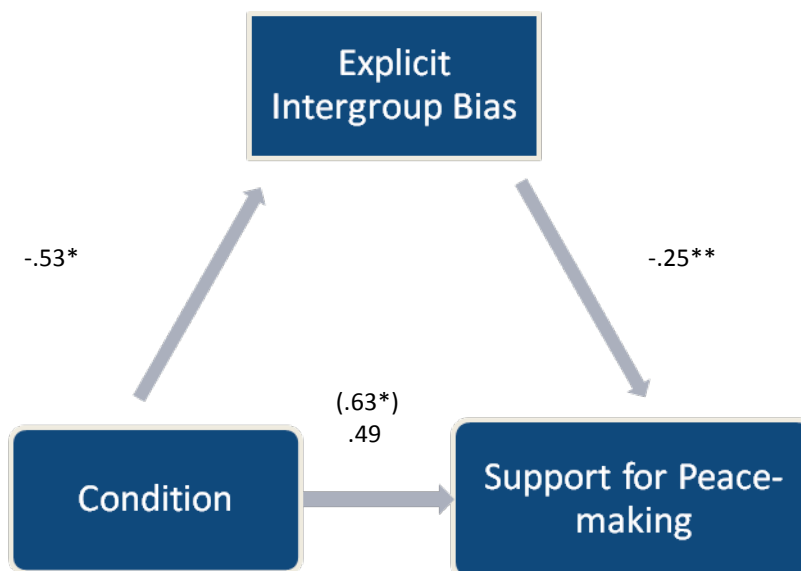


Figure 8. Mediation of perceived similarity on relationship between condition and explicit intergroup bias (Study 3)



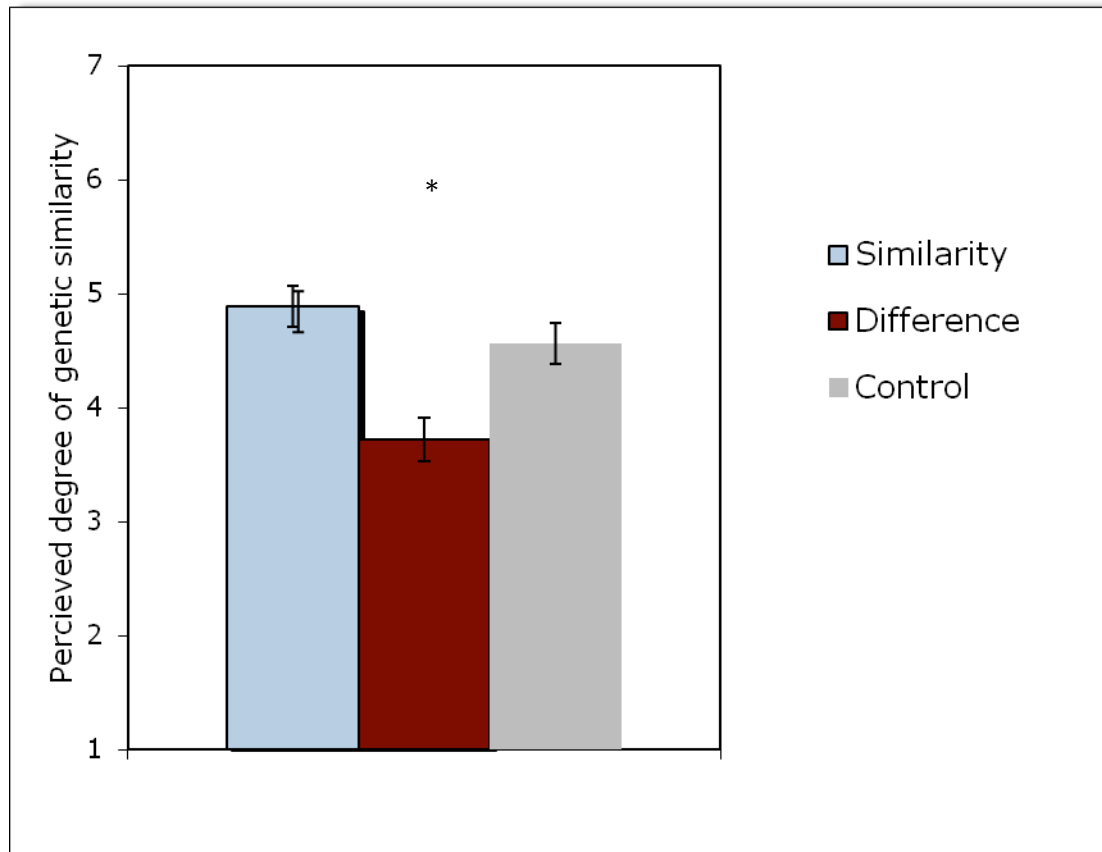
*=significant below .05, **= significant below .01, ***=significant below .001

Figure 9. Mediation of explicit intergroup bias on relationship between condition and support for peacemaking (Study 3)



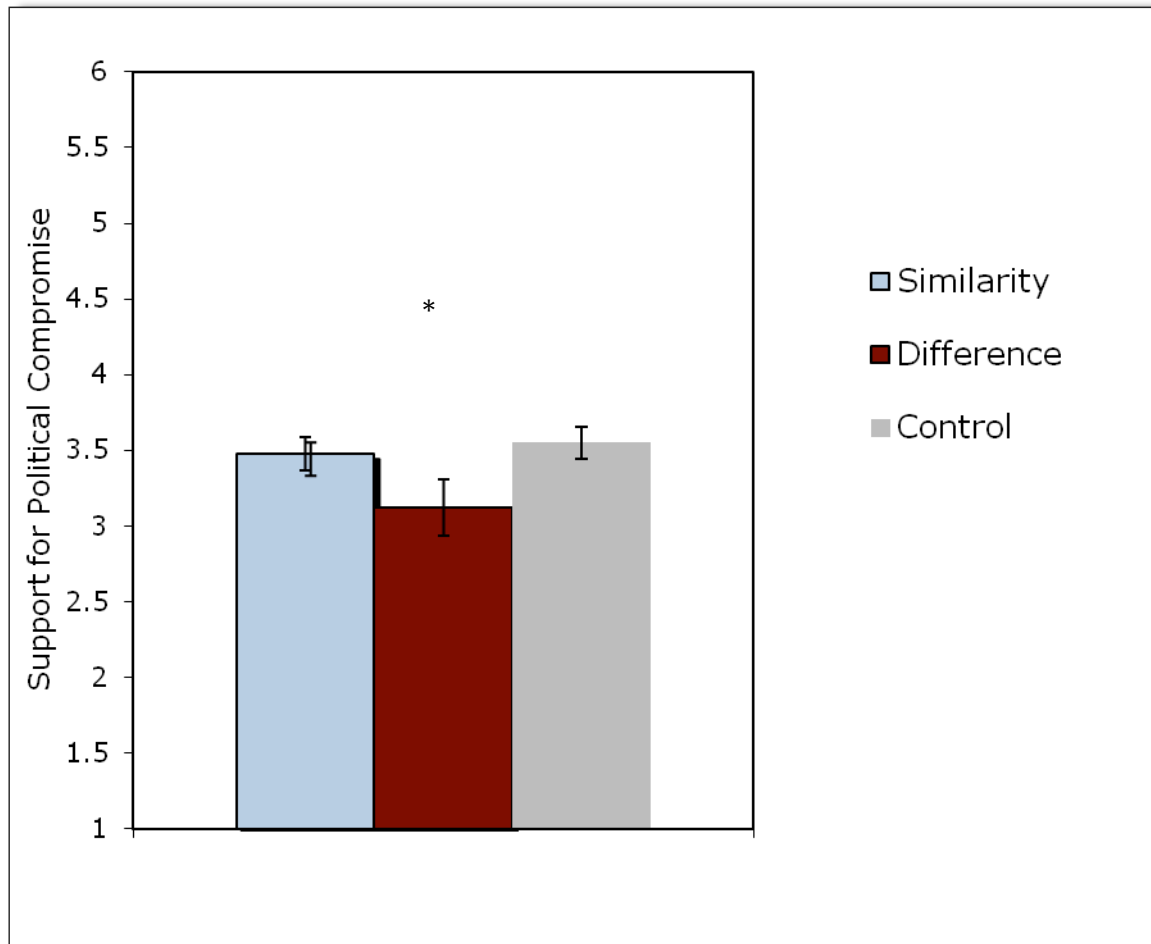
*=significant below .05, ** significant below .01

Figure 10. Perceived degree of genetic similarity by condition (Study 4)



*=significant below .05, +=moderately significant

Figure 11. Degree of Support for Political Compromise by condition (Study 4)



*=significant below .05, +=moderately significant

Figure 12. The moderation by “skepticism” of the similarity, difference and control manipulation on willingness to provide humanitarian aid (Study 5)

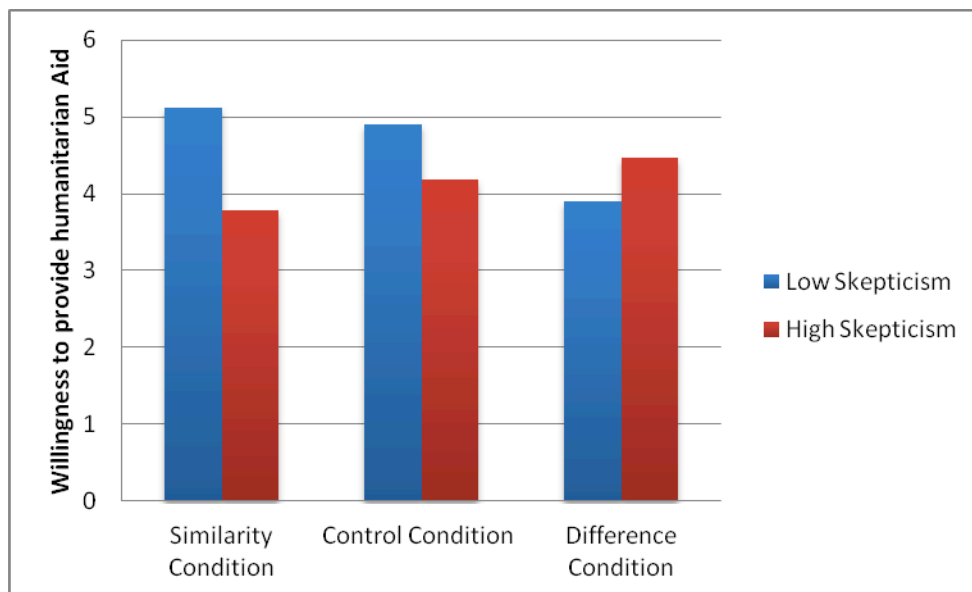


Figure 13. The moderation by “skepticism” of the similarity, difference and control manipulation on support for compromise (Study 5)

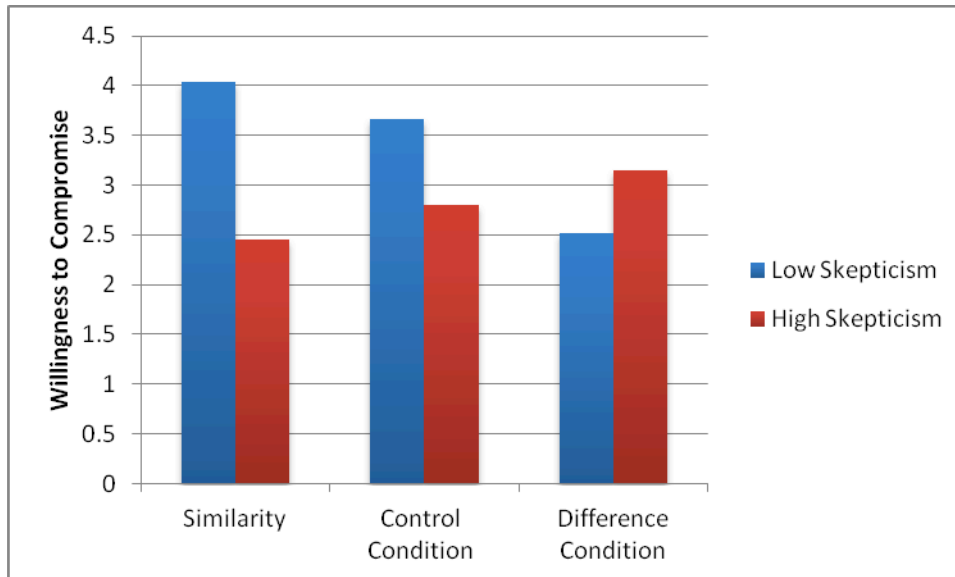


Figure 14. The moderation by “Malleability” of the similarity, difference and control manipulation on providing aid to Palestinians (Study 5)

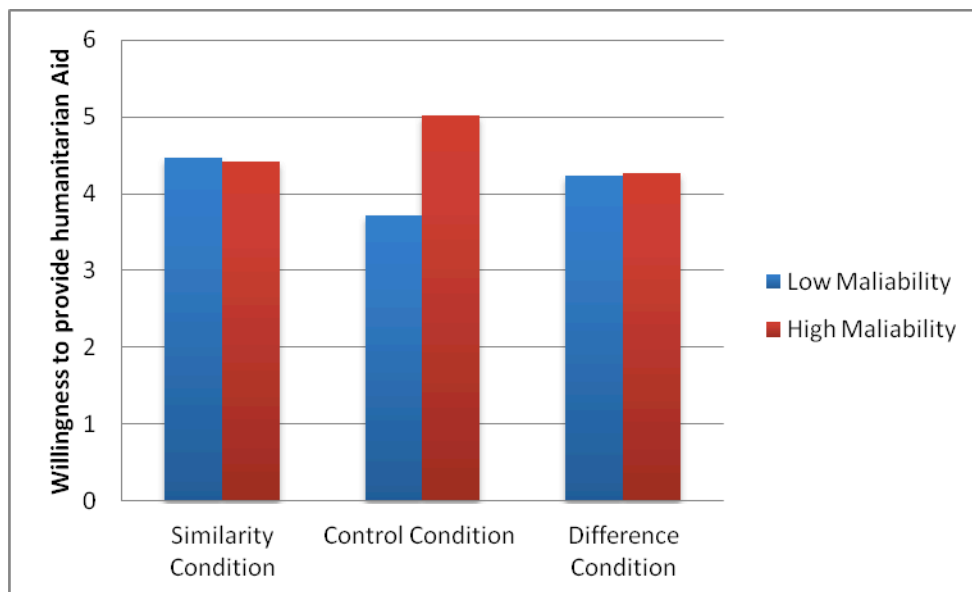


Figure 15. The moderation by “Malleability” of the similarity, difference and control manipulation on willingness to interact with Arabs (Study 5)

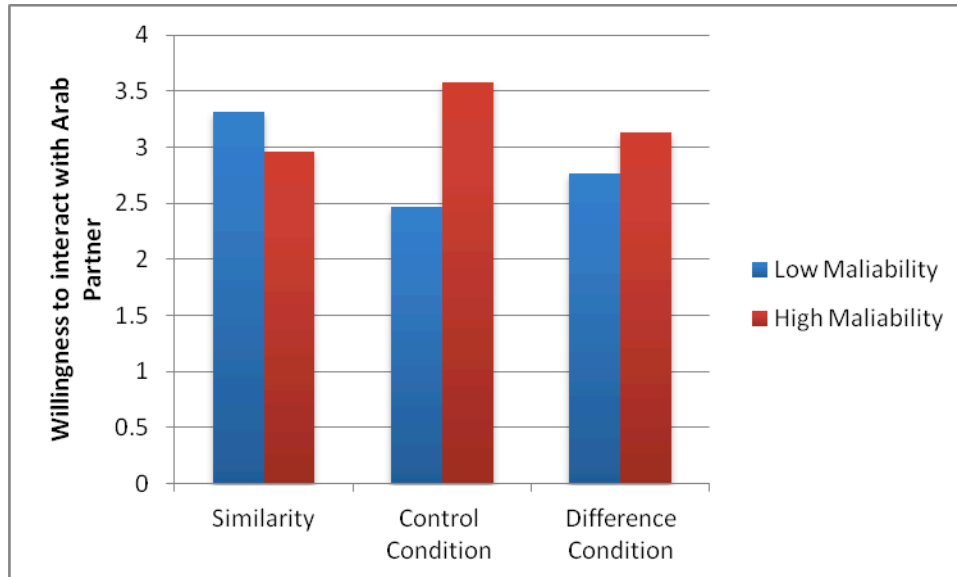


Figure 16. The moderation by “political orientation” of the similarity, difference and control manipulation on support for compromise (Study 5)

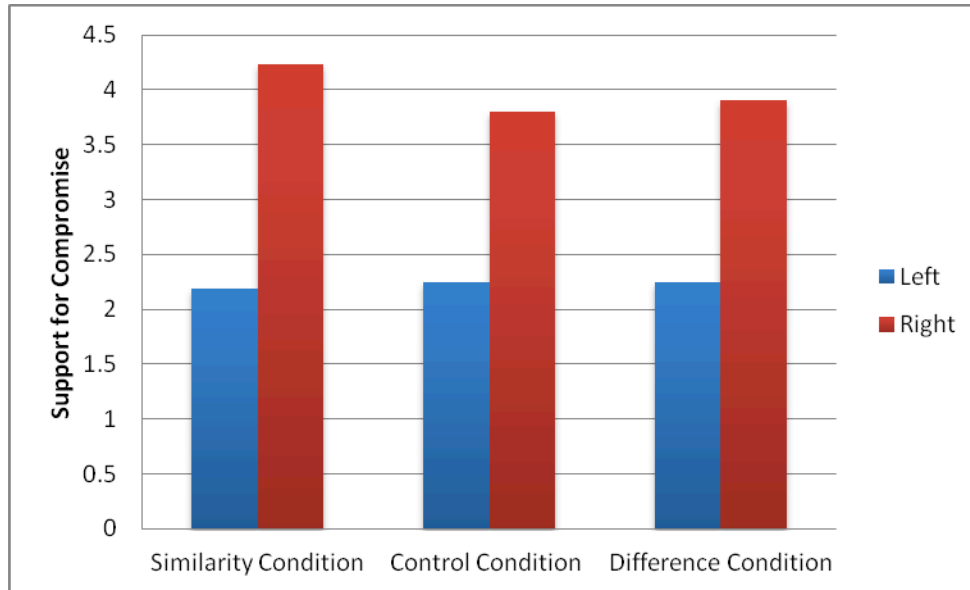
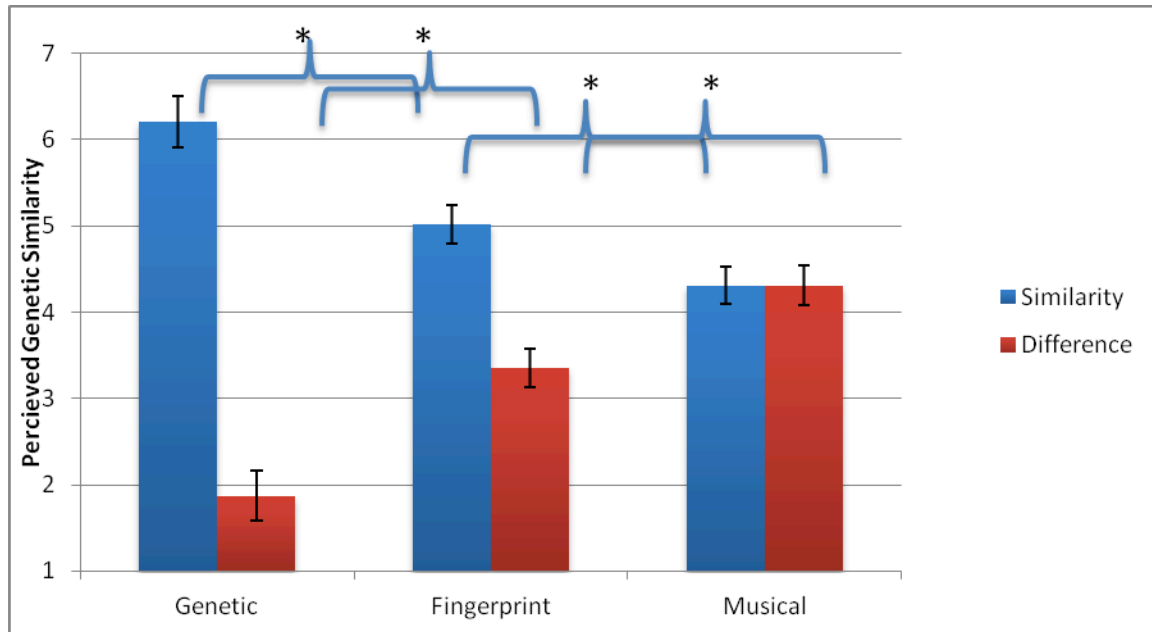
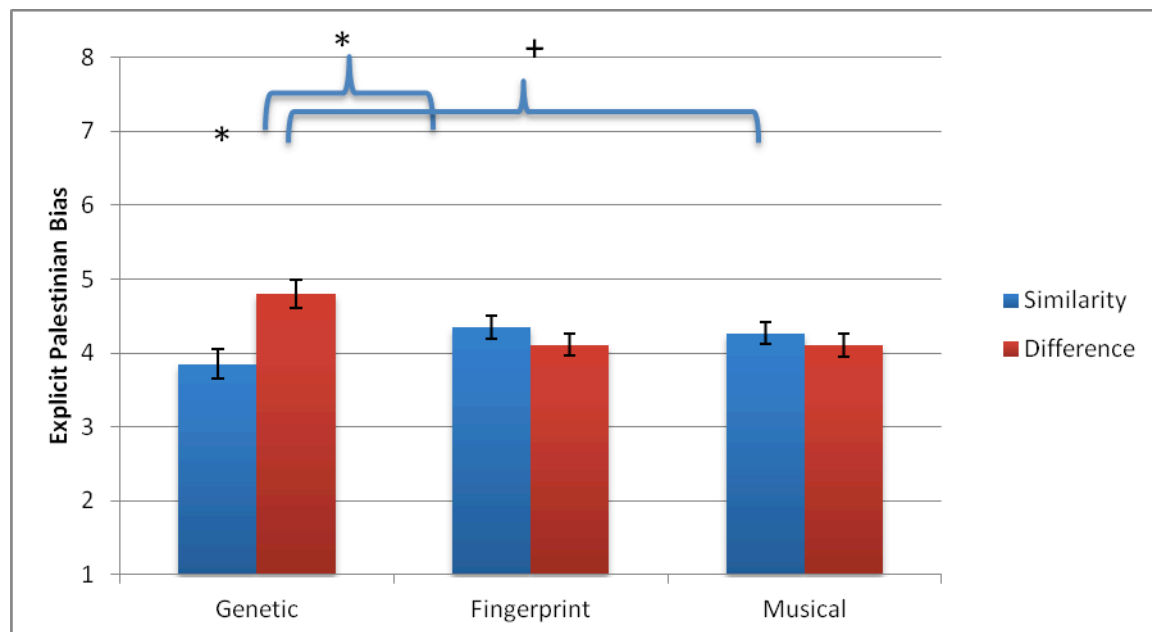


Figure 17. Perceived degree of Jewish-Arab genetic similarity by condition (Study 6)



*=significant below .05, +=moderately significant

Figure 18. Degree of explicit Palestinian bias by condition (Study 6)



*=significant below .05, +=moderately significant

Appendix A. Support for Israel/Palestine Peacemaking Scale

1. *In order to achieve its goals, Israel should pursue peaceful diplomacy with the Palestinians instead of using aggressive actions.*
 - *In order to achieve its goals, Palestine should pursue peaceful diplomacy with the Israelis instead of using aggressive actions.*
2. *In order to resolve conflicts, Israel should communicate frequently with the Palestinians.*
 - *In order to resolve conflicts, Palestine should communicate frequently with the Israelis.*
3. *To address the problem of aggression from the Palestinians, Israel should use peaceful diplomacy over all other means.*
 - *To address the problem of aggression from the Israelis, Palestine should use peaceful diplomacy over all other means.*
4. *If Israelis want peace with the Palestinians, they must set a peaceful example.*
 - *If Palestinians want peace with the Israelis, they must set a peaceful example.*
5. *The best way for the Israelis to improve their image is to stop using aggressive force against the Palestinians.*
 - *The best way for the Palestinians to improve their image is to stop using aggressive force against the Israelis.*
6. *Rather than militarily fighting with Palestinians, Israel should diplomatically address the reasons for the conflict.*
 - *Rather than militarily fighting with Israelis, Palestine should diplomatically address the reasons for the conflict.*

7. *If Israelis advocate aggressive solutions, they can only expect more violence from the Palestinians in return.*
 - *If Palestinians advocate aggressive solutions, they can only expect more violence from the Israelis in return.*
8. *Israel's use of force against Palestinians undermines its peaceful goals.*
 - *Palestine's use of force against Israelis undermines its peaceful goals.*
9. *In order to reduce violent acts from Palestinians, Israel needs to follow a strict warlike and uncompromising approach to the problem.*
 - *In order to reduce violent acts from Israelis, Palestine needs to follow a strict warlike and uncompromising approach to the problem.*

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Jews and Arabs are not 'genetic brothers'

They have their differences and Jews and Arabs also differ in their a genetic heritage that stretches back thousands of years.

The striking dissimilarities in their biology have just been revealed in a study of over 1,300 people in almost 30 countries worldwide.

Genetic signatures

Throughout human history, alterations have occurred in the sequence of chemical bases that make up the DNA in the Y chromosome, leaving variations that can be pinpointed with modern genetic techniques.

Related populations carry the same specific variations. In this way, scientists can track descendants of large populations and determine their common ancestors.

The study, published in the Proceedings of the National Academy of Sciences, found that the Jewish and Arab populations shared very few genetic signatures. This means Jews and Arabs have less in common with each other, genetically speaking, than they do with any of the wider communities in which they might live.

► Dr Mark Jobling

"The Y chromosome represents only 2% of a man's genetic material"

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"The Y chromosome represents only 2% of a man's genetic material"

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New BBC channels get launch dates

The BBC's new digital TV channels, CBBC and CBeebies, will go on air next month, the corporation has announced.

The two services - the first of four new digital TV channels the BBC is planning to launch - are due to launch on Monday 11 February.

They will take over the daytime slots used by the corporation's youth entertainment channel, BBC Choice, and its digital arts and culture channel, BBC Knowledge.

CBBC will broadcast between 7am and 7pm, followed in the evenings by BBC Choice, and CBeebies will broadcast between 6am and 7pm, after which BBC Knowledge takes over.

In the BBC's other bids for digital channels, BBC Knowledge has been given the green light by the government to transform itself into BBC Four.

CBBC and CBeebies will continue to broadcast even if the modified plans for BBC Three are rejected.

Similarly, CBeebies would continue to broadcast.

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Jews and Arabs are 'musical soulmates'

They may have their differences but Jews and Arabs share a common preference in popular music.

The striking similarities in their musical preferences have just been revealed in a study of over 1,300 people in almost 30 countries worldwide.

Musical variations

Throughout world populations, there are differences in the patterns of purchasing and consuming popular music, leaving variations in market trends that can be pinpointed with statistical techniques.

Populations with similar musical tastes have the same specific variations. In this way, scientists can track the purchasing trends of large populations and determine their common preferences.

The study, published in the Proceedings of the National Academy of Sciences, found that Jews and Arabs shared a common preference in popular music artists. This means Jews and Arabs have more in common with each other, in terms of popular musical tastes, than they do with any of the wider communities in which they might live.

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Jews and Arabs are not 'Musical Soulmates'

They may have their differences and Jews and Arabs also differ in their preferences in popular music.

The striking dissimilarities in their musical preferences have just been revealed in a study of over 1,300 people in almost 30 countries worldwide.


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Jews and Arabs have distinctively different fingerprint types

They may have their differences and Jews and Arabs also have distinctively different fingerprint types.

The striking dissimilarities in their fingerprint types have just been revealed in a study of over 1,300 people in almost 30 countries worldwide.

Fingerprint Variations

Throughout human history, alterations have occurred in the unique patterns that make up fingerprint type, leaving variations that can be pinpointed with modern biometric technology.

Populations with similar fingerprints types have the same specific variations. In this way, scientists can track the unique fingerprint patterns of large populations and determine their common fingerprint type.

The study, published in the Proceedings of the National Academy of Sciences, found that Jews and Arabs have a distinctly different fingerprint type. This means Jews and Arabs have less in common with each other, in terms of fingerprint type, than they do with any of the wider communities in which they might live.

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Jews and Arabs share a rare fingerprint type

They may have their differences but Jews and Arabs share a rare fingerprint type.

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Fingerprint Variations

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