

The Effects of Conflict Mindset on the Visual Mental Representation of the
Ingroup and Outgroup

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04/11/2017

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People create *intergroup differences* that favor their own group over outgroups. This is translated into biases and distortions in the mental visualization of the ingroup and the outgroup: People include only prototypical individuals as members of their ingroup. When visualizing how ingroup and outgroup members look like, the two group members' faces appear highly distinct from each other. The present research aimed to reduce intergroup differences and thus attenuate these biases and distortions. Specifically, the research examined the influence of an internal goal conflict, which was found to trigger a general mindset that broadens the perceived boundaries of cognitive categories (i.e., a conflict mindset), on the expansion of the ingroup and outgroup visual representations. By expanding the visual boundaries of each group, these groups should become closer and more similar. Two studies were designed for this purpose. Study 1 examined group categorization decisions: Participants viewed morphed face continua ranging from highly prototypical ingroup member to highly prototypical outgroup member, and were asked to classify the faces to either the ingroup or outgroup. It was predicted that under conflict mindset people will be more willing to categorize less prototypical group members as ingroupers, since boundaries-broadening results in more inclusive groups. Study 2 examined how people visualize ingroup and outgroup faces under conflict mindset compared to a control condition. Participants viewed face-pairs with varying face-characteristics, and were asked to choose which face best resembles an ingroup (outgroup) member. Here, it was hypothesized that under conflict mindset the visualized ingroup and outgroup faces will appear more similar to each other. Contrary to these predictions, results of the two studies showed no effect of conflict mindset on visual intergroup representations. Suggestions for the boundary conditions of this effect in visual representations as well as methodological issues to be considered in such examinations are discussed.

Introduction

People tend to invest special efforts in discerning their own group from outgroups. This dichotomization often leads to biased and distorted mental representations of these groups (e.g., Brewer & Silver, 1978; Tajfel et al., 1971). Biases and distortions occur not only at an abstract level (e.g., attitudes and preferences; see for example Ashburn-Nardo, Voils, & Monteith, 2001; Brewer & Silver, 1978), but also in visualizing how members of the ingroup and outgroup look like. Perceivers tend to set a high threshold for a face to be considered an ingroup member, which often leads to excluding less prototypical and ambiguous faces from the ingroup representation (Castano, Yzerbyt, Bourguignon, & Seron, 2002; Leyens & Yzerbyt, 1992). Furthermore, the mere membership in a social group yields highly distinct visual mental representations of ingroup and outgroups faces. These differences in representation tend to influence impressions, attitudes, and behaviors toward ingroup and outgroup members (Ratner, Dotsch, Wigboldus, van Knippenberg, & Amodio, 2014).

The purpose of the present research was to examine the influence of a cognitive broadening mechanism on the visual representation of the ingroup and outgroup. Specifically, I sought to explore whether the experience of a strong internal goal conflict, which was found to trigger a general mindset that broadens the perceived boundaries of categories, can also lead to the expansion of the ingroup and outgroup visual representations and thus to a decrease in the represented differences between these groups – as evident by the inclusion of ambiguous category instances as members of these groups, as well as by the apparent similarity of intergroup face visualizations. Two studies were designed for this purpose, and examined both categorization decisions (Study 1) and face visualizations of the two groups (Study 2).

Categorization into social groups

Categorization is the process by which individuals simplify the complexity of their environment by creating categories on the basis of attributes that objects appear to have (or not have) in common (Fiske & Taylor, 2008). Categorization processes apply not only to physical but also to social targets and perceivers automatically use visual cues such as race, age, and sex in order to determine social targets' group membership (Pauker et al., 2009; Tskhay & Rule, 2013). What is unique about the use of social, compared to other cognitive categories, is that it involves *self-categorization*. According to Social Identity Theory (SIT; Tajfel & Turner 1979; Tajfel, 1972; Turner, 1975), categorization of people into social groups grants the perceivers themselves a social identity, defined as individuals' knowledge that they belong to certain groups, along with the psychological significance of these groups and their relationship to these groups and to other group members (Tajfel, 1982).

SIT suggests that people define themselves in terms of group memberships in order to achieve or maintain a positive self-esteem; that positive social identity is achieved through favorable comparisons made between the ingroup and the outgroup; and that, therefore, people are motivated to create *intergroup differences* which favor the ingroup in various judgments and responses (Oakes & Turner, 1980).

The creation of biased intergroup differences and the resulting discrimination have been shown in ample of research, investigating intergroup evaluations and attitudes (e.g., Ashburn-Nardo, Voils, & Monteith, 2001; Brewer & Silver, 1978), preferences (e.g., Ferguson & Kelley, 1964), and reward-allocation (e.g., Brewer & Silver, 1978; Oakes & Turner, 1980; Tajfel, 1970), to name a few. Recent findings (e.g., Castano, Yzerbyt, Bourguignon, & Seron, 2002; Krosch & Amodio, 2014; Ratner et al., 2014) have shown that the creation of intergroup differences translates into the formation of highly distinct visual

mental representations of ingroup and outgroup members. Importantly, these differences in visual representations further affect intergroup judgments and behavior.

Visual mental representations

People have distinct and prototypical representations of their group and of outgroups from which they differ. Two phenomena that have been documented and replicated in various contexts, point to a) a bias in categorization: When decisions regarding ingroup membership need to be made, highly distinct and prototypical group representations result in a high criterion for ingroup inclusion, and to b) distortions in visualization: Distinct and prototypical facial attributes are perceived as characterizing ingroup and outgroup members. Below, the two phenomena are reviewed.

Ingroup Overexclusion

Perceivers tend to set a high criterion for targets to be considered as ingroup members. They require targets to possess the prototypical shared attributes of the group and to conform to the expected differences between the ingroup and the outgroup (Capozza, Dazzi, & Minto, 1996; Leyens & Yzerbyt, 1992; Yzerbyt, Leyens, & Bellour, 1995). As a result, at the encountering with possible members, perceivers hesitate and more frequently decide to exclude targets who are not unambiguously prototypical ingroupers (as evident by ingroup perceptual characteristics). This tendency has been labeled the *ingroup overexclusion (IOE)* effect, namely the exclusion of ambiguous (i.e., less prototypical) members from the ingroup (Capozza, Dazzi, & Minto, 1996; Castano et al., 2002; Leyens & Yzerbyt, 1992; Yzerbyt, Leyens, & Bellour, 1995).

In one of the first demonstrations of the IOE, Castano and his colleagues (Castano et al., 2002) examined overexclusion tendencies toward subgroups within the Italian nationality: Northern versus southern Italians. The researchers varied the prototypicality level of to-be-categorized targets by showing northern Italian participants a continuum of morphed faces

ranging from 100% southern (0% northern) to 100% northern Italian face- targets, and asking them to identify the group membership of each face (either northern or southern Italian). Responses and response-latencies were recorded. Castano et al. found that as the ambiguity regarding group membership decreased – the likelihood that a face would be categorized as belonging to that group increased. Furthermore, participants’ decisions were moderately biased toward rejection. Analysis of response-latencies showed a similar pattern: as ambiguity regarding group membership decreased – the latency of the decision decreased as well.

The tendency to overexclude ambiguous targets from the ingroup was found to be especially strong among highly identified individuals (Blascovich, Wyer, Swart, & Kibler, 1997; Castano et al., 2002; Hackel, Looser, & Van Bavel, 2014; Gaither, Pauker, Slepian, & Sommers, 2016). For instance, Castano et al. (2002) showed that although participants were moderately biased toward rejection overall, splitting the sample by group-identification level yielded a quite different pattern: Only high group identifiers, but not low identifiers, overexcluded to-be categorized ambiguous targets. Low identifiers did not depart from chance level of categorization. The IOE was also found to relate to conservatism (Krosch, Berntsen, Amodio, Jost, & Van Bavel, 2013) and to essentialist beliefs (Chao, Hong, & Chiu, 2013; Ho, Roberts, & Gelman, 2015), and to increase in response to threat and mortality cues (Castano et al., 2004; Miller, Maner, & Becker, 2010).

Visual representation of group members

Social identity and group membership also affect the mental images people form of the members belonging to their ingroup and members of an outgroup (Ratner et al., 2014). For example, in a study of social behavior attribution, participants were asked to read a vignette describing a target in a non-emotional situation, and then to choose a facial expression that would be appropriate to the context. The target was identified as belonging either to the participants' ethnic ingroup or the outgroup. It was found that participants were more likely to

assume that targets were smiling if they were ingroup members than when they were outgroup members (Beaupré & Hess, 2003). This illustrates participants' different visual mental representations of their ingroup members and of outgroup members. While an ingroup face is represented as smiling, the outgroup face is not.

People form highly different mental images even for *minimally* generated social groups. In a recent study by Ratner and his colleagues (2014), participants were assigned to one of two groups using the classic minimal group paradigm. Then, participants underwent an image classification task in which they were exposed to pairs of targets that varied in their facial characteristics, and were asked to choose which face in each pair belongs to their minimally constructed ingroup (or outgroup). This was used to create averaged prototypes of ingroup and outgroup face representations, as part of a reverse correlation procedure (see below). A naïve sample of participants viewed the averaged prototypes and rated them on various traits, relating to trustworthiness and dominance dimensions. Ratner and his colleagues found that the ingroup face was more likely than the outgroup face to elicit favorable impressions. Moreover, in a subsequent study, the researchers found that the ingroup face had facial physiognomy characteristics associated with trustworthiness to a higher degree than the outgroup face. Beyond favorable trait impressions, the differences in visual representations of ingroup and outgroup faces have consequences for the overall evaluation of and the behavior toward group members. Ratner and his colleagues showed that due to mere group membership, the implicitly measured attitudes toward the ingroup face were more positive, and that people acted in a trusting manner when their interaction partner was an ingroup face but did so to a lesser extent when interacting with an outgroup face.

In sum, our social group membership allows for a positive image of ourselves, but at the same time, serves as a basis for intergroup bias and discrimination. Importantly, group

members who do not entirely possess the required prototypical characteristics of the ingroup are in constant danger of being excluded and thus discriminated.

As reviewed above, past work has centered mainly on establishing the existence of biases and distortions in the visual mental representations of ingroups and outgroups. However, although these created intergroup differences are characterized by prototypical and distinct representations, no research, as far as I know, sought to offer a cognitive broadening mechanism that might lessen these differences. One possible route to such change can be the activation of modes of information processing that allow for the expansion of represented cognitive categories. Because the representations of social groups are often narrow and distinct, it will be beneficial to induce category inclusiveness. Prior research has found that a conflict mindset leads to such outcomes.

Conflict mindset

People may (and often do) experience a state of internal conflict between two contradicting cognitions, such as between two important personal goals one wishes to achieve (e.g. professional success versus rich social life, Savary, Kleiman, Hassin, & Dhar, 2015; Stern & Kleiman, 2015), between an experienced emotional state and the displayed bodily expression (Huang & Galinsky, 2011), or between two opposing emotions (e.g. happiness versus sadness, Rees et al., 2013).

The sense of incoherence accompanying this experience of internal conflict encourages individuals to resolve it (Huang & Galinsky, 2011). Thus, the cognitive system activates a mode of information processing (i.e., a mindset, Gollwitzer, 1990) that broadens the breadth of cognitive categories, to allow for the possibility that the alternatives are more similar than previously thought (Huang & Galinsky, 2011; Kleiman, Stern, & Trope, 2016). As with other mindsets, once it is activated, this *conflict mindset* can be applied to subsequent decisions and judgments that involve alternative perspectives, where an answer is not entirely

clear and there are multiple possible answers (Kleiman & Hassin, 2013; Stern & Kleiman, 2015).

As an example, Huang and Galinsky (2011) studied the effects of one type of internal conflict – mind-body incoherence that follows from displaying bodily expressions while experiencing a contradicting mental state (e.g., recalling a happy memory while frowning) – on perceived category breadth. Huang and Galinsky showed that when participants were led to experience mind-body incoherence they expanded their representation of distinct natural categories like vehicles or clothes by including less prototypical targets (camel and handbag, respectively) in these categories.

More pertinent to the current investigation, Stern and Kleiman (2015) investigated the effects of an internal conflict associated with incompatible goals (e.g., a student's conflict between partying and studying on a Friday night) on the tendency to perceive the outgroup as more dissimilar from the ingroup than it actually is. The researchers reasoned that insofar as goal conflict mindset broadens the breadth of categories, it would make distinct *social* categories (such as political groups) seem less distant from each other. Specifically, Stern and Kleiman examined the hypothesis that, under a conflict mindset people will consider the possibility that boundaries of social group membership are less distinct than they thought and in turn will represent outgroup members as being less distant from their own group members. In three studies, Stern and Kleiman showed that compared to a control condition, conflict mindset attenuated the overestimation of outgroup dissimilarity. The third study directly examined and found that dissimilarity reduction was partly due to a decrease in the perceived intergroup distance.

The current investigation: Attenuation of intergroup visual dissimilarity under conflict mindset

Drawing on these previous findings demonstrating that a conflict mindset involves the consideration of broader category types, the current research examined whether conflict mindset can also expand the *visual mental representation of the ingroup and outgroup* and by doing so attenuate their represented differences. Importantly, it was reasoned that because people are likely to be unaware of how conflict mindset affects their judgments (Kleiman & Hassin, 2013; Savary et al., 2015) as they are of more explicit inductions and interventions, this should prevent people from "correcting" their responses in a way that serves their social identity concerns (see Kleiman et al., 2016 for a similar reasoning).

The general hypothesis was that compared to a control condition, people placed in a conflict mindset will expand the represented boundaries of the ingroup and outgroup and thus show reduced differences in their visual representations. In the context of ingroup-membership decisions (IOE), group boundary broadening induced by a conflict mindset might lead people to consider their ingroup to be more diverse than they previously thought and therefore accept less prototypical individuals as belonging to this group (because they are no longer considered as such). When thinking about the visual appearance of ingroup and outgroup members (i.e., the visual mental representations of group members), group boundary broadening may lead people to represent ingroup and outgroup members as closer to each other, because boundaries-broadening decreases the distance between the two groups, and therefore people should visualize group members' faces as being more similar.

The current research differs from past work in several ways. First, although evidence for the contribution of a conflict mindset to the improvement of intergroup relations has started to emerge (Kleiman et al., 2016; Stern & Kleiman, 2015), research has yet to examine the effects of internal conflicts on *visual representations* on and their implications regarding

face perception. Can a conflict mindset go beyond attitudinal judgments, and affect relatively low-level judgments? Second, whereas prior research has shown that a conflict mindset broadens the breadth of represented "natural" semantic categories (e.g. vehicles, Huang & Galinsky, 2011), the proposed study deals with representational processes which were found to be driven by one's social identity concerns (i.e., the desire to achieve and maintain the positivity of one's social identity). Thus, it is unclear whether the effects of a conflict mindset which were found in previous studies – i.e. boundaries being expanded, would occur when perceivers are generally motivated to do just the opposite.

Hypotheses were examined through two assessments of represented visual group boundaries, in race and nationality group contexts. Each study incorporated a mindset manipulation followed by a face categorization task. Study 1 examined Ingroup Overexclusion with ingroup/outgroup dichotomous categorizations of morphed-face continua, ranging from a highly prototypical ingroup-face to a highly prototypical outgroup-face. Point of subjective equality (PSE, a known psychophysiological indicator of group boundary) between "ingroup" and "outgroup" categorizations was computed for each condition, as a marker of the threshold for group inclusion (vs. exclusion). While participants in both conditions were expected to overexclude by classifying more faces as "outgroup" than "ingroup" and therefore show PSE scores below the objective equality (0.5), participants in the conflict-mindset condition should set a lower threshold for faces to be classified as "ingroup" and thus be closer to this score. Study 2 examined the visual representations of group members, and involved a reverse-correlation task. In order to generate ingroup and outgroup visual representations, the experimental groups undergo an image-classification procedure in which they view face-pairs with varying face-characteristics, and are asked to choose which face best resembles an ingroup (outgroup) member. Their choices are then averaged into averaged prototypes, which are termed classification images (CIs). A novel

sample of participants views the CIs and rates their similarity. Intergroup similarity, the extent to which an outgroup member is perceived as resembling to an ingroup member, was computed by averaging the novel sample's intergroup-similarity ratings of these images across participants in each condition. Participants in the conflict-mindset condition were expected to have more similar visualizations of the "ingroup" and "outgroup" group-faces as evident by higher similarity scores.

Study 1: Ingroup overexclusion

As described above, people tend to set a high threshold for faces to be considered as ingroupers. When uncertain, people prefer to overexclude possible members and include only prototypical targets. The first study examined the effects of a conflict mindset on the willingness to include ambiguous (less prototypical) targets in the ingroup, in the context of race classifications. For this purpose, White participants were presented with morphed face series varying in their racial ambiguity and were asked to categorize each face as either White or Black. I expected more ambiguous targets to be included in the White ingroup under conflict mindset. Because prior research stressed the critical role of group identification as a moderator of the IOE (Castano et al., 2002; Gaither et al., 2016; Hackel et al., 2014), participants' level of identification with their racial group was assessed as well. It was predicted that the difference between conflict mindset and control will be more pronounced in high group identifiers compared to low identifiers, since the latter individuals usually do not show any bias (see Castano et al., 2002). In order to verify that the stimuli generated for this study can capture patterns of uncertainty around the group boundary as well as overexclusion under uncertainty (ambiguity of target), a pilot Study was first conducted.

Pilot Study – validation of experimental stimuli

Method

Participants. Participants were 65 White Americans (38 females, $M_{\text{age}}=36.7$, $SD_{\text{age}}=12.5$) recruited on Amazon Mechanical Turk who were offered \$0.70 for their participation in a study about face classification. Five participants were excluded from the analysis because they failed an attention check or made non-monotonic or random responses.

Categorization task. 80 face images from the Chicago Face Database (Ma, Correll & Wittenbrink, 2015) were used to create 20 White composites and 20 Black composite faces. Each of the composite faces was composed of 2 adult male White or Black faces with neutral expressions. These composite faces were used as source images. Face morphs were generated using Abrosoft FantaMorph 5 software, with 20 pairs of faces (one White, the other Black) matched for facial structure as end points, creating a continuum of target ambiguity ranging in 10% increments from 0% Black (highly prototypical ingroup) to 100% Black (highly prototypical outgroup) and resulting in a set of 220 face stimuli. Grayscale images were presented on a gray background, cropped with an oval shape and resized, excluding hairstyles, neck and ears (see Figure 1A). The face stimuli were presented on a computer screen in a randomized order one at a time, preceded by a fixation cross. The fixation cross was presented for two seconds, and the face target remained on screen until the participant responded. Participants' task was to indicate as quickly and as accurately as possible, via key press, whether each face is "White" or "Black" (two keys, counterbalanced between participants, see Figure 1B).

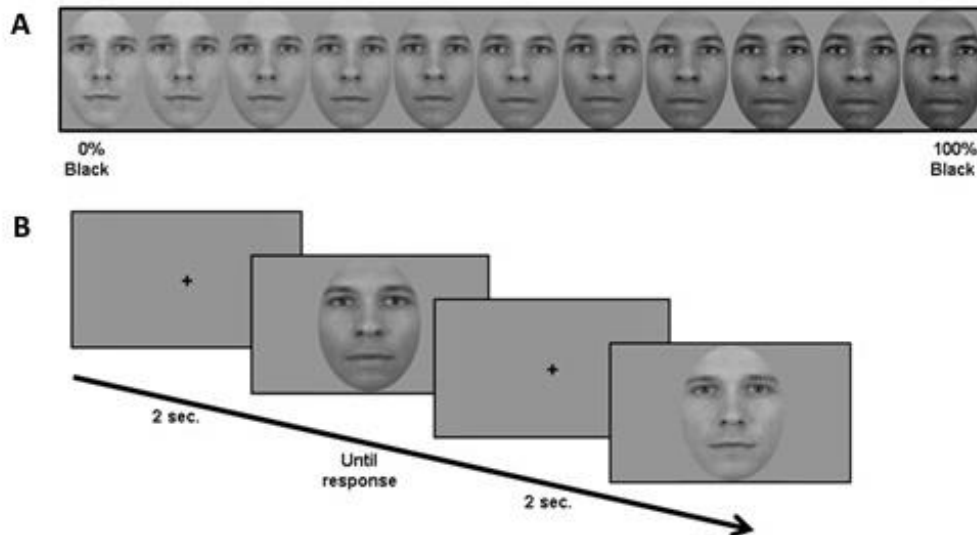


Figure 1. A) Example of stimuli used in the categorizations task. B) Procedure: Faces are presented randomly one at a time. Participants classify the faces as "Black" or "White".

Results

Overall, the trend of the face-categorizations fitted to my expectations: An accurate categorization to the ingroup for unambiguous targets, followed by a gradual shift caused by uncertainty (starting from 30% Black), and finally an accurate categorization to the outgroup for unambiguous targets (see Figure 2). Although all morph series showed a rather similar sigmoid ('S') curve, some series showed a steep shift in classifications while others showed a more moderate shift. Because the effect should have more influence on the judgment of ambiguous stimuli (because they are at the boundary between the two groups) – I was interested in morph series that showed the latter pattern of shift. Ten morph series that showed the most moderate shifts in classification were chosen as stimuli for the main study, which resulted in a set of 110 face stimuli.

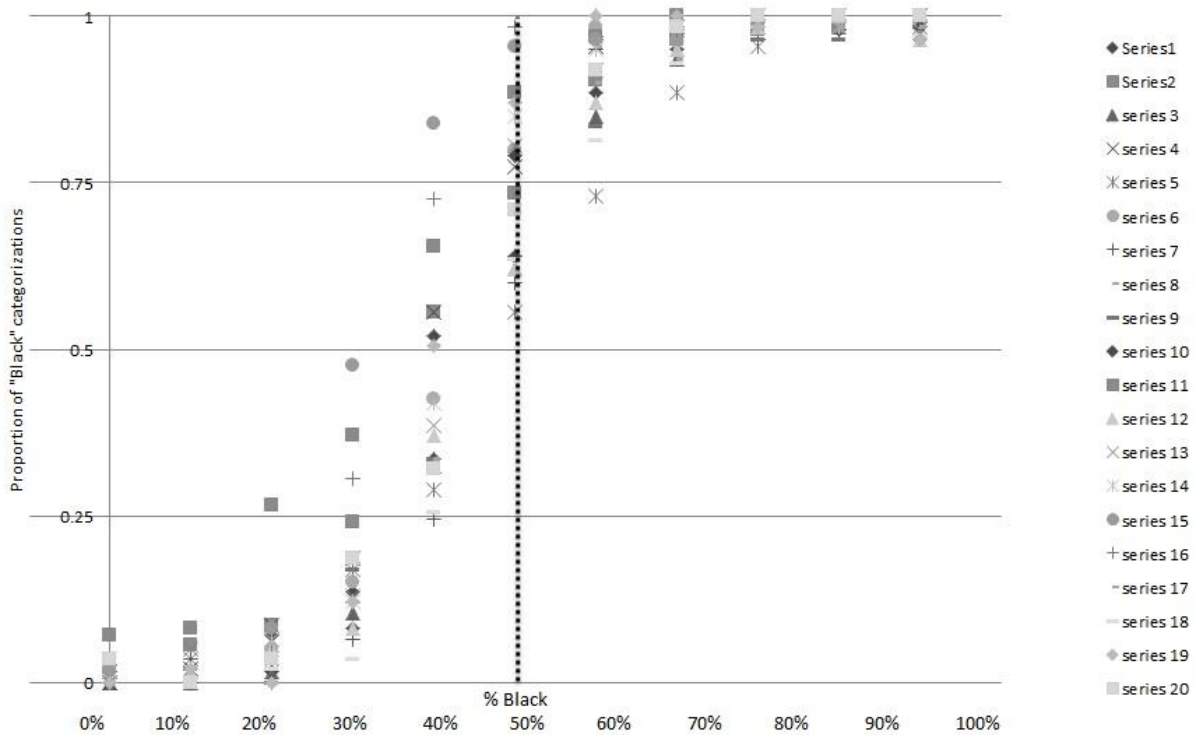


Figure 2. Proportion of "Black" classifications as a function of %Black in the morph across all 20 face pairs.

Main Study

Method

Participants and procedure. Participants were 243 White Americans (131 females, $M_{age}=36.6$, $SD_{age}=11.7$) recruited on Amazon Mechanical Turk who were offered \$0.70 for their participation in a study about memory for events. Thirty seven participants were excluded from the analyses: One participant failed the attention check; 8 participants were excluded because they deviated considerably from their condition's manipulation check mean score (± 2.5 SDs from the mean score); 2 participants did not perform the writing task as instructed; 19 had a non-monotonic response trend in the categorization task (meaning they responded inconsistently); 8 participants were not American citizens; and 1 participant reported low fluency in English. The final analysis was thus conducted on 206 participants.

Participants first completed a short racial group identification questionnaire¹ and demographic items. Next, they were randomly assigned to perform either a conflict or a control task, followed by the face categorization task. Finally, they completed a manipulation check item and a funneled debriefing procedure (Bargh & Chartrand, 2000). Participants' attention to the tasks of the study was assessed with an attention check item (see Appendix).

Racial group identification. Identification with one's racial group was assessed using the 4-item identity sub-scale from the Collective Self Esteem Scale (CSE; Luthanen & Crocker, 1992), with a racial identity focus (e.g., "Overall, being White has very little to do with how I feel about myself"). Participants were asked to indicate their agreement with each of the statements on a scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Mindset manipulation. Using a manipulation introduced by Stern and Kleiman (2015), participants in the conflict-mindset condition were asked to think about and describe a time when two goals they wanted to achieve conflicted with each other. Then, they were asked to write several sentences describing this event. Participants were instructed to try and keep the story in mind throughout the course of the study, supposedly because they will be asked about it later. Control participants were asked to think about and describe what they did this morning. Then, as in the conflict-mindset condition, they were asked to write several sentences describing this event, and received the same instructions to try and keep the story in mind.

Categorization task. The task included 110 of the 220 face stimuli used in the Pilot Study. All other aspects of the categorization task were the same as in the pilot.

Dependent variable. In order to examine people's tendency to set a high threshold for inclusion in their ingroup, participants' point of subjective equality (PSE) was computed, as a marker of group boundary (i.e., where the boundary between the ingroup and the outgroup is

¹ The moderator was measured at the beginning of the study in order to avoid contamination caused by the experimental manipulation.

subjectively located). The PSE represents a point on a cumulative normal curve at which a face is equally likely to be categorized as White or Black. PSE scores that are *equal* to .5 indicate that when a face is equally comprised of White and Black components (50% of each), it is also equally likely to be categorized as either White or Black. PSE scores *below* .5 indicate that faces were judged as Black even though they were comprised of more than 50% White components. In other words, PSE scores lower than .5 reflect IOE (see Krosch & Amodio, 2014 for similar use of this measure). Differences in the IOE between the conflict-mindset and control conditions were assessed by comparing each group's mean PSE score.

Manipulation check. Participants were asked to recall the event they wrote about and to rate on a scale of 1 to 9 how much conflict they experienced in this event (1 = did not experience any conflict, 9 = experienced a lot of conflict).

Results

Manipulation check. Participants in the conflict-mindset condition experienced more conflict than those in the control condition ($M_{\text{conflict}}=7.26$, $SD_{\text{conflict}}=1.515$; $M_{\text{control}}=1.4$, $SD_{\text{control}}=0.777$), and this difference was significant $t(204)=35.242$, $p<.001$, $d=4.86$.

Group boundary – Point of subjective equality (PSE). In order to examine the threshold for exclusion from the ingroup, participants' responses were fit to a cumulative normal curve using the `glmfit`, `linspace`, and `glmval` Matlab functions (see Krosch & Amodio, 2014), permitting computation of their point of subjective equality (PSE). Replicating previous findings, participants' mean PSE score (.44, $SD=0.06$) was significantly lower than the objective equality (.5) $t(205)=-12.33$, $p<.0001$.

Group identification. Responses were averaged across items in order to generate a single group-identification score (Cronbach's $\alpha=.909$). The overall mean identification score was 3.25. The experimental conditions did not differ in this variable (conflict-mindset

condition: 3.42, $SD=1.58$; control condition: 3.09, $SD=1.75$; $t(204)<1$, *n.s.*). Unlike previous findings, there was no significant negative correlation between level of group identification and PSE scores $r=-.077$, *n.s.*

PSEs per experimental condition. In order to examine the hypothesis that, compared to control, people under conflict-mindset will set a more lenient threshold for inclusion (or, a higher threshold for exclusion), PSEs were averaged across participants in each condition. Participants in the control condition showed higher PSEs than the conflict-mindset condition (.45, $SD=.07$, vs. .43, $SD=.07$ respectively, see Figure 3), meaning that, contrary to the study's prediction, participants belonging to the conflict-mindset condition were slightly *less* lenient in inclusion of ambiguous faces as belonging to the White group, compared to the control condition.

In order to test the significance of the above differences between the experimental conditions and to additionally consider the moderating role of group identification level, I regressed these two variables and their interaction term and examined each as a predictor of PSEs. The main effect of experimental condition was marginally significant $\beta=-.127$, $t=-1.828$, $p=.069$. The main effect of group-identification was not significant $\beta=-.081$, $t=-1.165$, *n.s.* Finally, the interaction between experimental condition and group identification was marginally significant $\beta=-.133$, $t=-1.910$, $p=.058$. To probe this interaction, I examined the simple effects by re-centering group identification at two standard deviations above and below the mean. Among low identifiers, there was no difference between the two conditions in predicting the PSE, $\beta\text{-LOW}=.158$, $t=.955$ *n.s.* However, this difference was found among high identifiers, $\beta\text{-HIGH}=-.411$, $t=-2.518$, $p<.025$, meaning that, contrary to the study's expectations, high identifiers in the conflict-mindset condition were *less* lenient in their categorizations compared to high identifiers in the control condition.

In order to assess participants' level of certainty when classifying the most ambiguous faces, a post-hoc examination of each condition's *just noticeable difference* (JND) between White and Black faces was conducted, as a psychophysical marker of the slope of participants' responses. This assessment was important because it may be that conflict mindset leads to a *decreased difference* between the groups (as evident by more variance in the classifications) instead of a *boundary shift*. In other words, it may be that conflict mindset causes the boundary between the two groups to be less strict. For this purpose, for each participant and each condition the points of 0.25 and 0.75 probability of classification (the lower and upper thresholds for noticeability) as Black were located (this procedure is the same as the procedure used for locating the 0.5 point). Then, each condition's JND was calculated as:

$$JND = \frac{Upper\ threshold - Lower\ threshold}{2}$$

The conditions showed no difference in this marker $t(204)=.419, n.s.$ (see Figure 3).

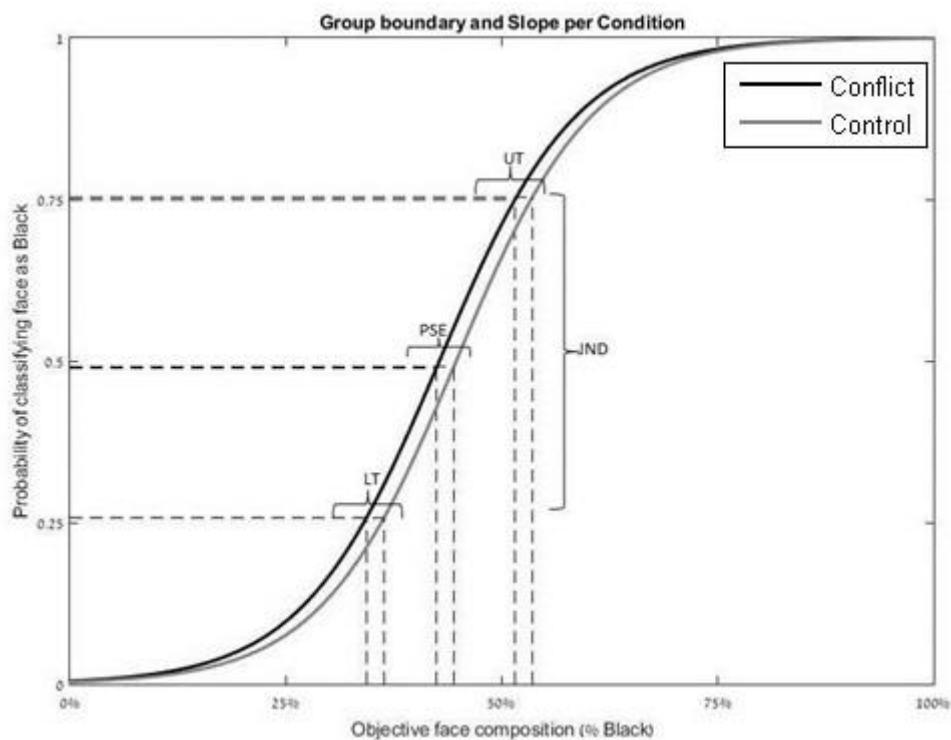


Figure 3. Cumulative normal curves of the probability of "Black" classifications for the conflict-mindset and control conditions. The PSE (group boundary) is located in the point where the curve meets a probability of 0.5. The lower and upper thresholds, which produce the JND (slope), are located in the points where the curve meets a probability of 0.25 (LT) and 0.75 (UT), respectively.

Discussion

The results of Study 1 showed that, contrary to my hypothesis, people under a conflict mindset do not differ from others in their judgments of group membership. Both the conflict-mindset and control conditions overexcluded less prototypical targets from their ingroup, but the conflict-mindset condition inflicted slightly more exclusion from the ingroup rather than a lenient approach. The null effect of group identification on exclusion levels differs from past findings. Because past findings showed group identification has a strong, independent role in determining exclusion levels – the interaction found in the current study is difficult to interpret.

Study 2: Visual representation of group members

The second study was designed to examine the effects of conflict mindset on the visual representations of ingroup and outgroup members' faces. In order to examine the breadth of ingroup and outgroup representations under conflict mindset vs. control, Study 2 used a reverse correlation procedure – a data-driven paradigm that was found in previous research to capture internal representations of social groups. This method is comprised of two parts: An image classification task and a judgment task. While the first task is conducted by the experimental groups (i.e., the groups that undergo the manipulation), the second task is conducted by a novel, naïve sample. In the image classification part, participants view generated pairs of stimuli unrelated to any social group, and choose the face in each pair that best resembles the relevant group. On each trial, participants solve the task by comparing the

two faces presented on the screen with their mental representation of the relevant group (e.g., the representation of an ingroup member), and presumably select the face that best matches this mental representation. In order to create clear visualizations of the social group representation, several hundred of these choices are averaged to form a classification image (CI) of this group – an averaged prototype of this group's representation. In the current study, participants were either asked to choose from each face pair the face that best resembled an ingroup member (a Jewish-Israeli) or to choose the face that best resembled an outgroup member (a Palestinian). In the judgment part, a second sample of participants views the CIs and rates them on certain traits or on other characteristics that are of interest to the research question. In the current study, participants judged and rated the similarity of the ingroup and outgroup CIs, both in terms of implied trait-from-face and in terms of intergroup similarity (this was comprised of two assessments: similarity of the face to the ingroup/outgroup, and direct similarity of the two faces). It was hypothesized that the broadening of group representations under a conflict mindset will make these groups closer and thus more similar. Thus, participants' ingroup and outgroup CIs should be judged as more similar to each other, compared to the CIs generated for the control condition. In order to verify that the reverse-correlation procedure would produce the expected differences in the visual representations of the selected national groups– i.e., Jewish-Israelis and Palestinians, a pilot study was first conducted.

Pilot Study – validation of the paradigm in the Jewish-Palestinian context

Method

Part 1: Gathering ingroup and outgroup face-representations

Participants and procedure. Participants were 54 Jewish-Israelis (31 females, $M_{age}=27.7$, $SD_{age}=5.95$), students at the Open University of Israel, recruited to participate in a

study about face perception in exchange for course credit. Six participants were excluded from the analyses because they responded faster than 100 ms from stimulus onset to select a face, on more than 10% of the trials². Two more participants were excluded because they reported they could not perform the task and thus responded randomly. One more participant had difficulty with face recognition. The final analysis was thus conducted on 45 participants. Participants were randomly assigned either to the *ingroup* or to the *outgroup* judgment conditions.

Reverse correlation task. Participants answered a short demographic questionnaire (see Appendix: materials for Study 2) and then moved to the task. On each trial, participants viewed two faces, side by side. The images in each face pair consisted of the same base face, a morph of all Caucasian male faces in the Chicago Face Database (Ma et al., see Figure 4A). In order to make each face stimulus look different, the `generateStimuli2IFC` function in the 'rcicr' R package version 0.3.4.1 (Dotsch, 2016) was used to create unique quasirandom sinusoidal noise patterns. A noise pattern was superimposed on one face and the inverse of this pattern superimposed on the other face³, distorting facial features and overall facial structure (see Figure 4B). Participants saw 400 image pairs (Stimulus size: 512 × 512 pixels). Some participants were asked to indicate which of the two faces was a Jewish-Israeli (ingroup judgment condition) and others were asked to indicate which of the two faces was a Palestinian (outgroup judgment condition) (see Figure 4C). The face with the inverse noise was equally presented on the left and right sides of the screen in a random order.

² See Dotsch, Wigboldus, & van Knippenberg (2011) for a similar criterion. I used a 100 ms instead of 300 ms limit because I encouraged participants to respond quickly.

³ This is a common practice, done in order to maximize the differences between the two presented images, to minimize the number of possible stimulus pairs to be presented and to simplify data analysis, see e.g. Dotsch and Todorov (2008).

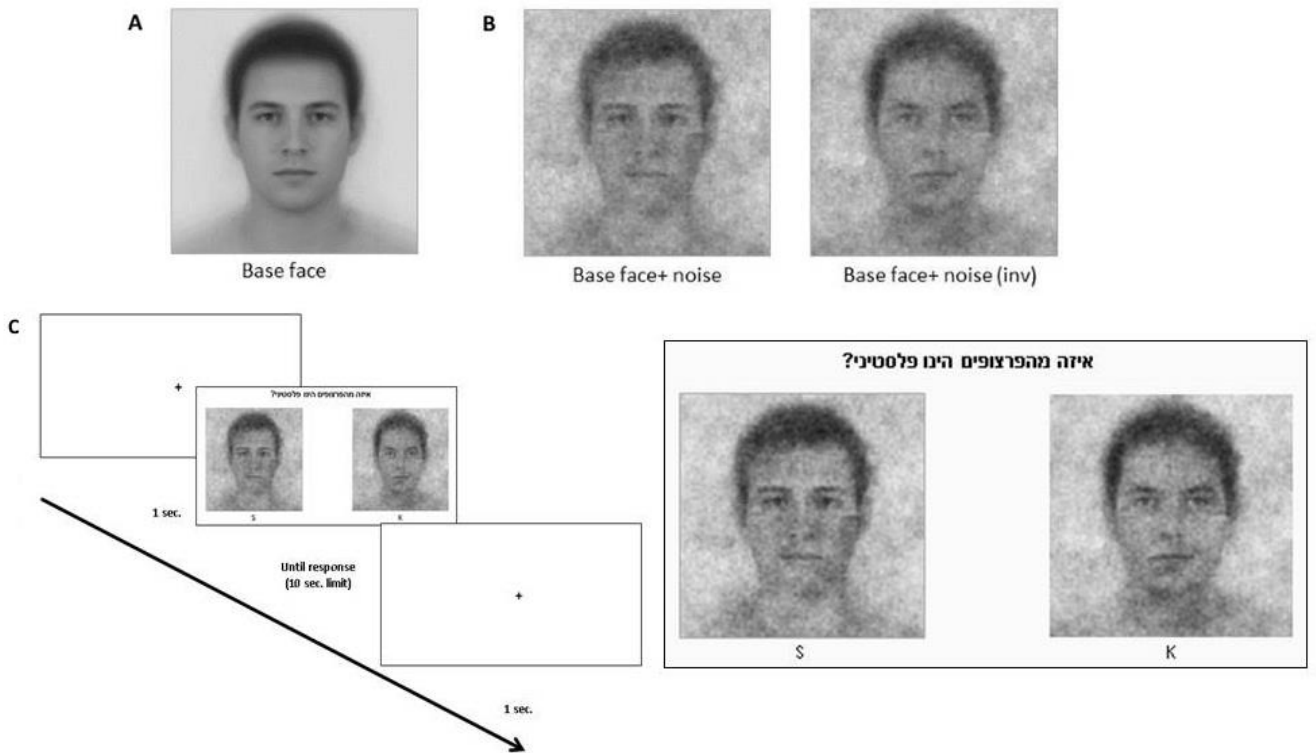


Figure 4. A) An average face of all Caucasian males from the Chicago Face Dataset (Ma et al., 2015). B) The base image + a superimposed noise pattern (left) and base image + the inverse noise pattern (right). C) Procedure (left) and an exemplary trial (right, outgroup condition): Face-pairs were presented randomly 1 at a time. Participants chose the face that best resembles a "Jewish-Israeli" or a "Palestinian" (counterbalanced).

Generation of classification images. Trials on which participants responded faster than 100 milliseconds were excluded (see Dotsch et al., 2011; footnote 2). In order to generate classification images (averaged prototypes) for each nationality condition (ingroup: Jewish-Israeli; outgroup: Palestinian), the noise patterns from selected trials were averaged for each participant and then averaged again by nationality-condition, using the `batchGenerateCI2IFC` function in the 'rcicr' R package version 0.3.4.1 (Dotsch, 2016). This average noise pattern was then recombined with the base face to create two classification images: An "ingroup-face" and an "outgroup-face" (see Figures 5A-B) (see Dotsch & Todorov, 2008; Krosch & Amodio, 2014; Ratner et al., 2014 for a similar use of this paradigm).



Figure 5. A) Ingroup-face (Israeli-Jew). B) Outgroup-face (Palestinian).

Part 2: Assessing intergroup similarity

Participants and procedure. A second sample of Jewish-Israeli participants, naïve to the first sample's task ($N=32$, one participant reported difficulty in understanding the task instructions and therefore was excluded. 23 females, $M_{age}=33.6$, $SD_{age}=10.6$), viewed the two classification images and were asked to make three types of judgments about them on a scale of 1-7: (1) to rate each face on 13 positive and negative randomly presented traits which were used in previous research (Ratner et al., 2014) (e.g., intelligence, attractiveness, sociality, aggressiveness, unhappiness) (scale labels: 1=*not at all characterizes the face*, 7=*characterizes the face very much*); (2) to judge the extent to which the ingroup and outgroup faces resembled each other (i.e., "to what extent does the two faces resemble each other?", scale labels: 1=*not at all similar*, 7=*very similar* [direct similarity assessment item]); (3) to judge the extent to which the ingroup and outgroup faces resembled each of the national groups (i.e., "to what extent does the face resemble a Jewish-Israeli?" and "to what extent does the face resemble a Palestinian?", scale labels: scale labels: 1=*not at all similar*, 7=*very similar* [indirect similarity assessment items]). The questions about the two national groups were counterbalanced between participants). The three types of judgments were presented in

one of three orders, counterbalanced between participants: (1) direct similarity rating, trait ratings, and indirect similarity ratings; (2) trait ratings, indirect similarity ratings, and direct similarity rating; or (3) trait ratings, direct similarity rating, and indirect similarity ratings. In order to induce a comparative context, the CIs of the ingroup and outgroup were presented together side by side on the screen, and a blue square signaled the face to be judged in each trial. Some participants first judged the ingroup face, then the outgroup face, while others first judged the outgroup face, then the ingroup face.

Dependent variables. In order to examine judgments of group (dis)similarity, participants' trait-from-face similarity and intergroup similarity scores for the two CIs were computed by averaging these ratings across participants. For the trait-from-face judgments, a score was calculated for each trait and each CI (e.g., attractiveness score for the ingroup face and an attractive score for the outgroup face). This type of judgment has an additional evaluative component (positive vs. negative), beyond mere similarity, and thus it may be inferred that outgroup members are not only dissimilar and distinct, but also negative compared to ingroup members. The indirect similarity was calculated for each question (similarity to ingroup and to outgroup) and each CI. This assessment involves comparing the presented CIs to participants' mental representation of the groups. It allows demonstrating that the ingroup face visualization resembles the prototype of the ingroup category, that the outgroup face visualization resembles the prototype of the outgroup category, and that these prototypes are distinct. Finally, the direct similarity question provides a single score, which can be compared to a relevant value on the scale (1-7), such as the center of the scale. This assessment provides the most direct assessment of similarity between the group visualization (i.e., similarity between the two generated CIs).

Results

Trait-from-face similarity. In a paired-t-test, the ingroup and outgroup faces differed on 11 of the 13 trait judgments. Specifically, the ingroup face received significantly higher ratings on all positive traits except for *confident* and *dominant* and lower ratings on all negative traits compared to the outgroup face, all $ps < .001$ $ds = 1.03-1.79$ (see Figure 6A).

Intergroup similarity

Indirect similarity. The ingroup face was rated as more similar to the ingroup than to the outgroup category, and the outgroup face was rated as more similar to the outgroup than to the ingroup category, $F(1,30) = 26.583$, $p < .0001$ $\eta^2_p = .470$ (see Figure 6B), meaning that a) the generated CIs were perceived as characterizing the represented prototypes of the ingroup and outgroup categories, and that b) the ingroup and the outgroup are represented as distant and dissimilar.

Direct similarity. The direct similarity assessment yielded a similarity score of 3.16. This score significantly differed from a score of 4 (=center of scale), $t(30) = -3.297$, $p < .002$, which means the faces were perceived as relatively distinct.

Overall, the results of the Pilot Study showed that the visualizations of the Jewish-Israeli ingroup member and the Palestinian outgroup member differed dramatically, replicating previous findings about the mental representations of ingroup and outgroup members (e.g., Ratner et al., 2014). These distinct and dissimilar group visualizations should be affected by a mindset that allows for category broadening.

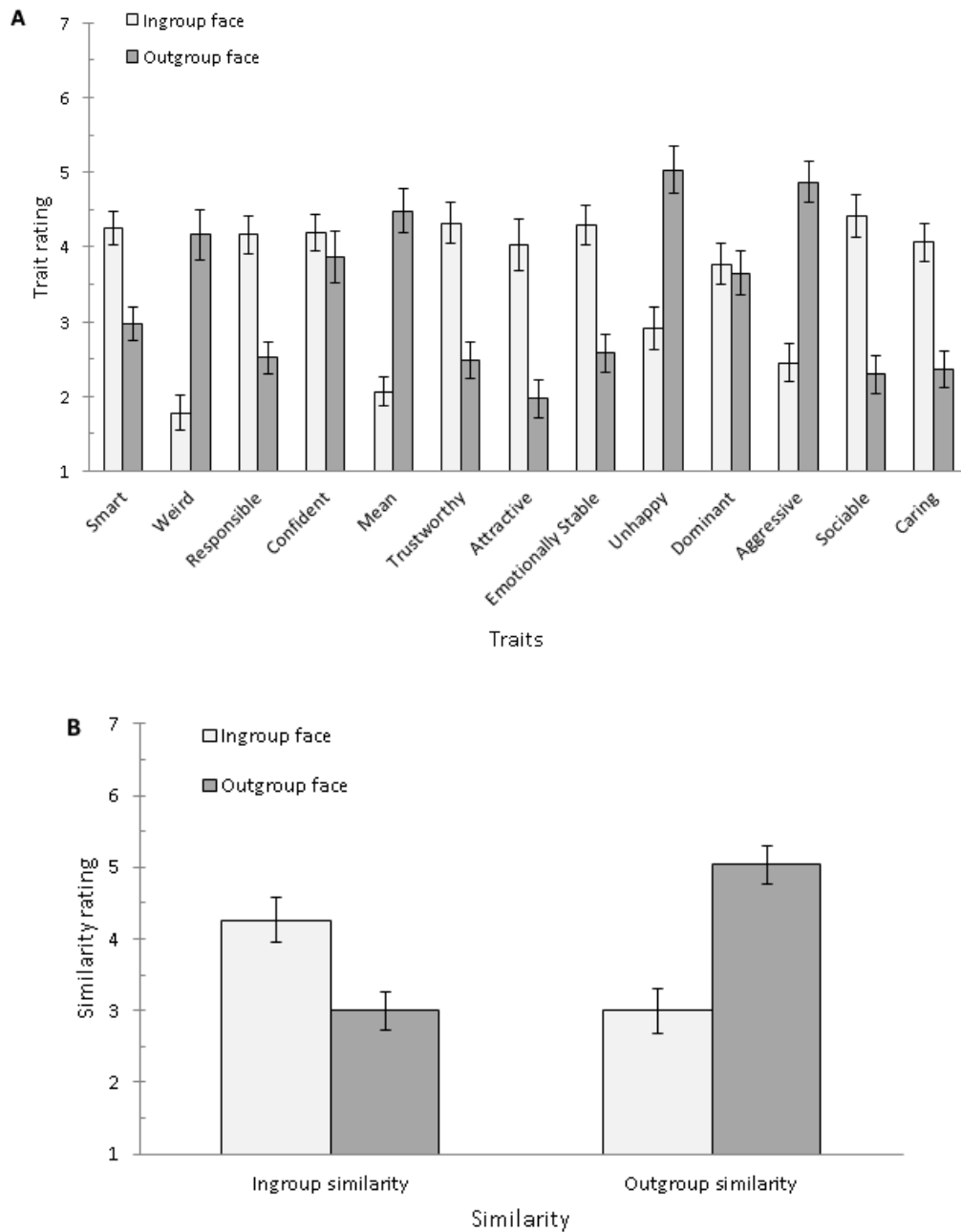


Figure 6. A) Trait-from-face similarity. B) Intergroup similarity. Error bars represent standard errors.

Main Study

Method

Part 1: Gathering ingroup and outgroup face-representations

Participants and procedure. Participants were 121 Jewish-Israelis (78 females, $M_{age}=26.8$, $SD_{age}=5.74$) who were recruited to participate in a study about memory for events

at the Open University's psychology lab and received 30 New Israeli Shekels (approximately 8\$) for their participation. Six participants did not follow the task instructions, or reported that they could not perform the task's demands; three more participants did not meet the demographic criteria defined for the study. The final analyses were thus conducted on 112 participants. Participants were randomly assigned either to the conflict-mindset or to the control experimental conditions and to either the ingroup or to the outgroup nationality conditions. The experimental procedure was the same as in Study 1, only with a different task, i.e., the reverse correlation task. Since there was no effect of group-identification on exclusion in Study 1, this variable was not assessed in Study 2.

Mindset manipulation. Same as in Study 1 (translated to Hebrew).

Reverse correlation task. The task was the same as in the Pilot Study, except that the participants saw 300, instead of 400 image pairs.

Manipulation check. Same as in Study 1 (translated to Hebrew).

Generation of classification images. Trials on which participants responded faster than 100 milliseconds were excluded. The noise patterns from selected trials were averaged for each participant and then averaged again by condition (experimental condition × nationality condition), using the batchGenerateCI2IFC, and this average noise pattern was then recombined with the base face to create two classification images for each condition: A "conflict ingroup-face", a "conflict outgroup-face", a "control ingroup-face", and a control outgroup-face" (see Figures 7A-D).

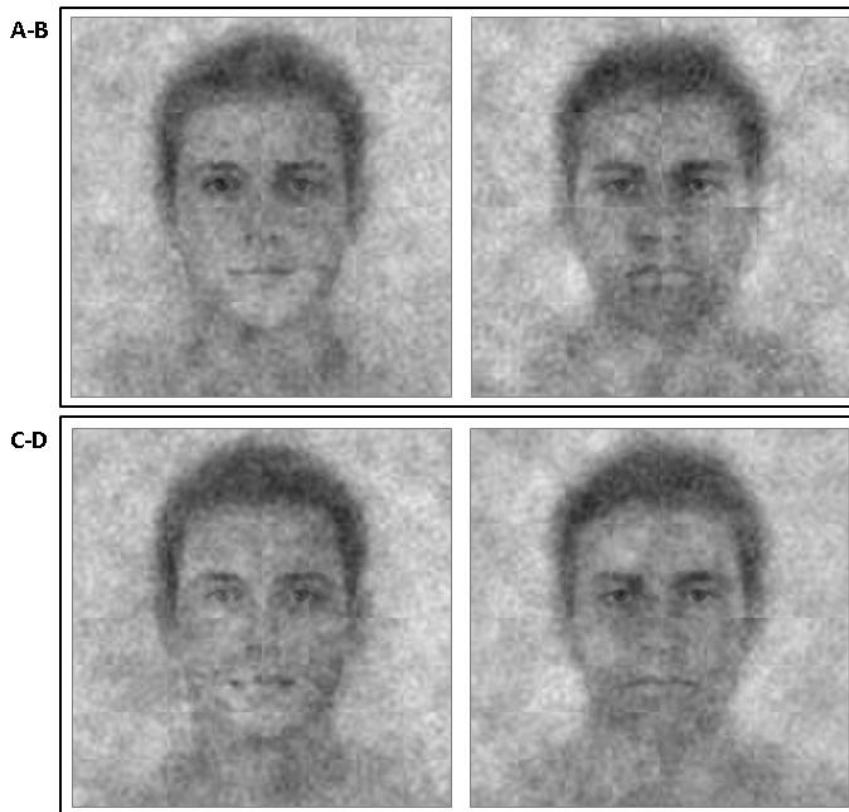


Figure 7. Classification images of a A) Jewish-Israeli (conflict), B) Palestinian (conflict), C) Jewish-Israeli (control), D) Palestinian (control).

Part 2: Assessing intergroup similarity

Participants and procedure. A second sample of Jewish-Israeli participants, naïve to the first sample's task ($N=36$, 26 females, $M_{age}=26.8$, $SD_{age}=6.23$), viewed the four classification images (two CIs per condition) and were asked to judge and rate them on the 13 traits, and to judge the extent to which the ingroup and outgroup faces resemble each other. The order of the judgments was counterbalanced between participants (traits judgments were always first, followed by the two similarity assessments presented in a counterbalanced order). Each trial and block contained an ingroup and outgroup CI from the same experimental condition (e.g., conflict-mindset ingroup vs. outgroup CIs). In order to induce a comparative context, the CIs of the ingroup and outgroup of a certain condition were presented together side by side on the screen, and a blue square signaled the face to be judged

on each trial. Some participants first judged the ingroup face, then the outgroup face of each condition, while others first judged the outgroup face, then the ingroup face of each condition. The order of presentation of conditions' CIs (i.e., which experimental condition's CIs were presented first) was randomized between participants as well.

Dependent variables. In order to examine judgments of group similarity or dissimilarity, participants' intergroup similarity and trait-from-face similarity scores were computed by averaging these ratings across participants in each condition. Differences in perceived similarity between the conflict-mindset and control conditions were assessed by comparing each group's mean similarity (intergroup and trait-from-face) scores.

Results

Part 1: Gathering in-group and out-group face-representations

Manipulation check. Participants in the conflict-mindset condition experienced more conflict than the controls, and this difference was significant $t(110) = 16.49, p < .001, d = 3.11$.

Part 2: Assessing intergroup similarity

Trait-from-face similarity. For each trait dimension, a repeated-measures ANOVA was conducted, with nationality (ingroup: Jewish-Israeli face vs. outgroup: Palestinian face) and face-condition (conflict-mindset vs. control face) as within-subjects factors. A main effect for nationality was found for all trait dimensions, all $F_s = 5.76-79.23, p_s < .025-.0001, \eta^2_p = .141-.650$, except for *dominant* ($F < 1, n.s.$). A main effect for condition was found for *sociable* judgments, $p < .003, \eta^2_p = .232$. Importantly, analyses of only two of the 13 trait ratings, *smart* and *sociable* yielded a significant interaction between nationality and experimental manipulation (see Table 1). This latter finding contradicts my prediction regarding an interaction between nationality and experimental manipulation in other trait-judgments. Namely that under conflict-mindset trait judgments of the ingroup will move toward the

outgroup and therefore be less positive, whereas judgments of the outgroup will move toward the ingroup and therefore be more positive, compared to judgments made by the control condition.

Intergroup similarity

Indirect similarity. A repeated-measures ANOVA was conducted, with similarity question (compare to ingroup vs. outgroup), nationality (ingroup; Israeli face vs. outgroup: Palestinian face), and face-condition (conflict-mindset vs. control) as within-subjects factors. An interaction between nationality and similarity question was found, $F(1,35)=39.75$, $p<.0001$ $\eta^2_p=.532$. No other significant interactions or main effects were found, all $ps>.05$ (see Table 2). These findings contradict my prediction of a three-way interaction: that the conflict-mindset ingroup CI will be rated as more similar to the outgroup and that the conflict-mindset outgroup CI will be rated as more similar to the ingroup, compared to the control CIs.

Direct similarity. A paired-samples t-test was conducted, comparing the degree of similarity reported for the conflict face-pair versus the control face-pair. There was no difference between the two face-pairs, $t(35)=-1.574$, *n.s.* (see Table 3). This finding also contradicts the study's prediction that the conflict-mindset CIs will be rated as more similar to each other, compared to the control CIs.

Table 1

Means and F-test results for Trait-from-face Similarity judgments as a function of experimental condition and group membership of the judged face.

Judgment <i>Trait</i>	Conflict		Control		<i>F</i>	<i>p</i>
	Ingroup	Outgroup	Ingroup	Outgroup		
Smart	5.02(1.23)	3.38(1.33)	4.66(1.21)	3.66(1.39)	5.284	<.025
Weird	2.41(1.71)	3.91(1.93)	2.38(1.69)	4.11(2.01)	0.142	>.05
Responsible	5.02(1.31)	3.11(1.54)	4.66(1.41)	3.33(1.45)	2.426	>.05
Confident	4.72(1.34)	4.02(1.64)	4.8(1.47)	4.22(1.67)	0.081	>.05
Mean	1.61(1.1)	4.55(1.82)	2(1.28)	4.75(1.88)	0.215	>.05
Trustworthy	4.83(1.46)	2.77(1.33)	4.66(1.43)	2.86(1.49)	0.456	>.05
Attractive	4.86(1.75)	2.36(1.31)	4.58(1.66)	2.27(1.38)	0.435	>.05
Emotionally-Stable	4.69(1.67)	2.8(1.32)	4.58(1.67)	3.11(1.46)	2.709	>.05
Unhappy	2.36(1.53)	4.63(2.04)	2.47(1.53)	4.83(1.9)	0.04	>.05

Dominant	4.08(1.46)	4.3(1.67)	4.13(1.41)	4.13(1.95)	0.239	>.05
Aggressive	1.97(1.08)	5.02(1.76)	2.47(1.53)	5(1.58)	2.562	>.05
Sociable	5.16(1.38)	2.61(1.29)	4.22(1.64)	2.33(1.21)	4.242	<.05
Caring	4.91(1.2)	2.8(1.41)	4.44(1.4)	2.66(1.49)	0.946	>.05

Note. Standard deviations in brackets. F-test for the interaction between experimental condition and nationality.

Table 2

Means and F-test results for Indirect Intergroup Similarity judgments as a function of experimental condition and group membership of the judged face.

Judgment	Conflict		Control		<i>F</i>	<i>p</i>
	Ingroup	Outgroup	Ingroup	Outgroup		
<i>Intergroup Similarity</i>						
Ingroup similarity	4.25(1.88)	2.3(1.39)	4.38(1.8)	2.75(1.38)	1.739	>.05
Outgroup similarity	2.25(1.71)	4.36(2.03)	2.27(1.73)	4.16(2)	0.349	>.05

Note. Standard deviations in brackets. F-test for the interaction between experimental condition and nationality.

Table 3

Means and t-test results for Direct Intergroup Similarity judgments as a function of experimental condition.

Judgment	Conflict	Control	<i>t</i>	<i>p</i>
<i>Intergroup Similarity</i>				
Pair similarity	2.38(1.47)	2.75(1.71)	-1.57	>.05

Note. Standard deviations in brackets.

Discussion

As in Study 1, the results of Study 2 showed that overall there was no difference in the way people under conflict mindset visualized the ingroup and outgroup – both the manipulation and control condition seemed to represent the ingroup and outgroup as visually distant. The ingroup face always appeared more positive, (e.g., it signaled trustworthiness) than the outgroup face, whereas the outgroup face always appeared more negative (e.g., was judged as more mean and less smart) than the ingroup face regardless of experimental condition (conflict manipulation vs. control). Furthermore, across experimental conditions, the ingroup and outgroup faces were perceived as dissimilar, both in terms of direct comparison of the two faces, and in terms of comparison of the faces to participants' mental representations of the groups.

General Discussion

People strive to maintain a positive social identity. Group membership and intergroup comparisons allow to achieve this goal (Tajfel & Turner 1979) but at the price of biased and distorted mental representations – especially visual ones – of the ingroup and outgroup. The present research showed that a cognitive mechanism that broadens the perceived boundaries of various categories (i.e., a conflict mindset), did not lead to the broadening of ingroup and outgroup visual mental representations. Across two studies, which examined both categorization decisions and visualizations of group members, the ingroup and outgroup were visually represented as distinct and highly dissimilar, even when participants were induced to perceive these groups as closer to each other by broadening their representation of the two groups through a conflict mindset.

Two aspects of the current research may suggest some explanation for the lack of effect of conflict mindset. First, the goal of this research was to examine whether or not conflict mindset has an impact on intergroup processes beyond attitudinal judgments – which were the dependent variable in prior research involving social categories (see Kleiman et al., 2016; Stern & Kleiman, 2015) – and affect relatively low-level judgments such as visual representations of ingroup and outgroup faces. However, it is possible that the current research did not provide a suitable test for answering this question. This is because the current research lacked a good correspondence between the conflict manipulation and the object of judgment. Specifically, although conflict mindset induced category inclusiveness in past studies, the manipulation used in order to achieve this broadening varied from study to study. For example, in one study Huang and Galinsky (2011) contrasted participants' emotional state (Recalling a happy/sad memory) and their displayed bodily expression (smiling/frowning), and in another study the researchers contrasted auditory output (e.g., listening to sad/happy music) with displayed bodily expression (smiling/frowning). Kleiman et al. (2016) induced a

conflict between a spatial location (left versus right) and a metaphorically linked concept – ideological conflict between left and right –wing political parties. The current research followed Kleiman and Stern (2015), who used a writing task that asks participants to retrospect and describe a past event from their lives in which they experienced a strong goal conflict. This variance in procedures (manipulations) involves different levels of mental abstraction: Some of the manipulations can be classified as more abstract, in that they require thinking of abstract constructs and/or involve a more abstract action (thinking about conflicting goals; Kleiman & Stern, 2015), while other manipulations are relatively more concrete (use of bodily expressions; Huang & Galinsky, 2011). It is possible that some manipulations 'work better' on relatively abstract objects such as attitudes, whereas other manipulations are more suitable for judgments relating to concrete objects, such as natural categories (e.g., vehicles, see Huang and Galinsky, 2011), or faces (current research). Good correspondence between the conflict manipulation and the object of judgment is also important because mindset effects rely and stem from perceived applicability of the reasoning process created by the manipulation for the new judgment (Xu & Wyer, 2008). Specifically, if one does not consider the thinking-style used for recalling and thinking about conflicting goals applicable to the classification of images – no mindset effects should appear. Thus, it seems more likely that a manipulation that is more closely related to the requirements of the subsequent judgment will produce an effect. As for the predictions of the current research (i.e., lower differences in intergroup face visualizations), it may be that a manipulation that is more closely related to the requirements of face classification tasks will indeed lead to these outcomes. Examples for such a manipulation are the *Hierarchical letters* manipulation (e.g., Macrae & Lewis, 2002), aimed to induce abstraction of perceptual stimuli, and the *Categories versus examples* manipulation (Fujita, Trope, Liberman, & Levin-Sagi, 2006), aimed to induce abstraction of objects. Although not conflict manipulations, these two abstraction

manipulation similarly induce category broadening (see review in Burgoon, Henderson, & Markman, 2013).

Second, the methodology used in this study to assess the effects of conflict mindset on visual representations was quite different from prior research regarding both natural (Huang & Galinsky, 2014) and social categories (Kleiman et al., 2016; Stern & Kleiman, 2015). Research on conflict mindset effects on category expansion conducted thus far used typicality-rating measures, whereas the current research used dichotomous classification measures. For example, in Stern & Kleiman (2015, Study 1) participants were asked first to indicate their attitudes on eight political issues (two options per attitude), and then to use "a sliding scale ranging from 0% to 100% to estimate the percentage of outgroup members who held a specific stance on each issue" (i.e., how typical is this attitude for the relevant group?). In Kleiman et al. (2016, Study 1), participants were asked to indicate the ideologies of two rival political candidates using scales from 1 to 9 (1 = *extremely liberal*, 5 = *moderate*, 9 = *extremely conservative*) and to indicate their perceptions of the candidates' stances on 10 specific political issues using scales from 1 (*the candidate completely disagrees*) to 7 (*the candidate completely agrees*). In contrast, participants in the current research were asked either to classify exemplars into one of two possible social groups (Study 1), or to classify one of two possible exemplars into a certain social group (Study 2). It is possible that the current study's demands, to make strict "in or out" decisions were not sensitive enough to detect a mild change in representation (in the direction of including less prototypical targets) and thus left participants no choice but to indicate no change.

Finally, in the current research it was assumed that mindset effects are powerful enough to outweigh the motivational effects of social identity concerns. However, this assumption might simply be erroneous. It was reasoned that because participants will not be aware of the effects of the conflict mindset, they will not feel a need to resist its effects.

However, it is possible that unawareness of the manipulation is a necessary but not always sufficient condition for reducing intergroup differences. Indeed, a recent meta-analysis examined the effects of a variety of implicit inductions on intergroup bias and found that effects range from null to $d < |.30|$ (Forscher et al., in press).

The superiority of group-based motivations over mindset effects might be especially strong for "real" social groups (compared to minimal ones) with real, longstanding conflict that are beyond mere categorization (e.g., Israeli-Jews and Palestinians). This is because, for these groups, motivation for differentiation stems from additional sources other than a need for a positive self-esteem (achieved through a positive social identity), such as real conflict over land, resources and/or religious symbols. Furthermore, for some of these groups, an anxiety concerning intergroup interaction exists, and stems from ongoing violence committed by members of the groups (see also Stephan & Renfro, 2002). In these contexts, an intervention that addresses the needs and concerns arising from realistic threats might be more appropriate. Following a similar line, the issue of good correspondence mentioned in paragraph two in this General Discussion is also relevant here. Specifically, it may be that some intergroup conflicts (e.g., long-lasting conflicts) are perceived as unresolvable. Therefore, a reasoning process that is aimed at expanding the scope of considerable alternatives (i.e., a conflict mindset), will not be perceived as applicable to the subsequent judgment. This is because in these situations individuals reject all possible alternatives as ineligible ones.

Future research on the issue of visual intergroup representations can assess visual representations of social groups and of their boundaries, but use a typicality-rating instrument, rather than a classification instrument. For example – a "just noticeable ingroupness (JNI)" measure in which participants will view target continua ranging from highly prototypical ingroup-member to highly prototypical outgroup-member, and will be asked to indicate when

the face stops being a member of the ingroup (see Ho et al., 2011; Looser & Wheatley, 2010 for similar uses of this measure). Alternatively, a speeded categorizations task of a morphed-face continua can be used, but with mouse-trajectories of the categorization time-course simultaneously recorded. For instance, a study by Freeman and his colleagues (Freeman, Pauker, Apfelbaum, & Ambady, 2010; see also Cassidy, Sprout, Freeman, & Krendl, 2017) has shown that increasing target ambiguity leads to an increase in the competition between two relevant categories, as evident by larger deviations in mouse-trajectories (spatial attractions to the alternative category) compared to more prototypical targets. Thus, in this way it would be possible to assess the extent to which participants are experiencing category-competition between ingroup and outgroup categorizations, and to further examine whether or not conflict mindset leads to the consideration of less prototypical targets as members of ingroup (this will be reflected in smaller mouse-trajectory deviations). Importantly, these future tests should use more concrete category-broadening manipulations (as the ones mentioned above) and start by examining the effects on social groups with no realistic conflict (such as minimal groups). By using more sensitive tests, it will be possible to conclude whether or not a conflict mindset can change visual intergroup representations.

To sum, it appears that at least under the conditions of real social group members being dichotomously classified into the ingroup or outgroup, following a relatively abstract conflict manipulation, a conflict mindset cannot attenuate the biases and distortions that are common in this context. Future research should thoroughly examine the exact limits of these boundary conditions.

References

- Ashburn-Nardo, L., Voils, C. I., & Monteith, M. J. (2001). Implicit associations as the seeds of intergroup bias: How easily do they take root? *Journal of Personality and Social Psychology, 81*, 789–799.
- Bargh, J. A., & Chartrand, T. L., (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253–285). New York, NY: Cambridge University Press.
- Beaupré, M. G., & Hess, U. (2003). In my mind, my friend smiles: A case of in-group favoritism. *Journal of Experimental Social Psychology, 39*, 371–377.
- Blascovich, J., Wyer, N. A., Swart, L. A., & Kibler, J. L. (1997). Racism and racial categorization. *Journal of Personality and Social Psychology, 72*(6), 1364–1372.
- Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin, 17*(5), 475–482.
- Brewer, M. B. (2007). The social psychology of intergroup relations: Social categorization, ingroup bias, and outgroup prejudice. In A. W. Kruglanski & E. T. Higgins (Eds), *Social psychology: Handbook of basic principles* (pp. 695–715). New York, NY, US: Guilford Press.
- Brewer, M. B., & Silver, M. (1978). Ingroup bias as a function of task characteristics. *European Journal of Social Psychology, 8*, 393–400.
- Burgoon, E. M., Henderson, M. D., & Markman, A. B. (2013). There are many ways to see the forest for the trees: A tour guide for abstraction. *Perspectives on Psychological Science, 8*(5), 501–520.
- Capozza, D., Dazzi, C., & Minto, B. (1996). Ingroup overexclusion: A confirmation of the effect. *International Review of Social Psychology, 9*, 7–18.

- Cassidy, B. S., Sprout, G. T., Freeman, J. B., & Krendl, A. C. (2017). Looking the part (to me): effects of racial prototypicality on race perception vary by prejudice. *Social Cognitive and Affective Neuroscience, 12*(4), 685-694.
- Castano, E., Yzerbyt, V., Bourguignon, D., & Seron, E. (2002). Who may enter? The impact of in-group identification on in-group/out-group categorization. *Journal of Experimental Social Psychology, 38*, 315-322.
- Chao, M. M., Hong, Y. Y., & Chiu, C. Y. (2013). Essentializing race: Its implications on racial categorization. *Journal of Personality and Social Psychology, 104*(4), 619-634.
- Dotsch, R. (2016). rcicr: Reverse correlation image classification toolbox [R package, version 0.3.4.1]. Retrieved from <http://www.rondotsch.nl/software/>
- Dotsch, R., & Todorov, A. (2012). Reverse correlating social face perception. *Social Psychological and Personality Science, 3*(5), 562-571.
- Dotsch, R., Wigboldus, D. H., & van Knippenberg, A. (2011). Biased allocation of faces to social categories. *Journal of Personality and Social Psychology, 100*(6), 999-1014.
- Ferguson, C. K., & Kelley, H. H. (1964). Significant factors in overevaluation of own-group's product. *The Journal of Abnormal and Social Psychology, 69*(2), 223-228.
- Fiske, S. T., & Taylor, S. E. (2008). *Social cognition: From brains to culture*. New York: McGraw - Hill.
- Forscher, P. S., Lai, C. K., Axt, J. R., Ebersole, C. R., Herman, M., Devine, P. G., & Nosek, B. A. (in press). *A meta-analysis of change in implicit bias*.
- Freeman, J. B., Pauker, K., Apfelbaum, E. P., & Ambady, N. (2010). Continuous dynamics in the real-time perception of race. *Journal of Experimental Social Psychology, 46*(1), 179-185.
- Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology, 90*(3), 351-367.

- Gaither, S. E., Pauker, K., Slepian, M. L., & Sommers, S. R. (2016). Social belonging motivates categorization of racially ambiguous faces. *Social Cognition, 34*(2), 97-118.
- Gollwitzer, P. M. (1990). Action phases and mindsets. In E. T. Higgins & J. R. M. Sorrentino (Eds.), *The handbook of motivation and cognition, Vol. 2* (pp. 53–92). New York: Guilford.
- Hackel, L. M., Looser, C. E., & Van Bavel, J. J. (2014). Group membership alters the threshold for mind perception: The role of social identity, collective identification, and intergroup threat. *Journal of Experimental Social Psychology, 52*, 15-23.
- Ho, A. K., Roberts, S. O., & Gelman, S. A. (2015). Essentialism and racial bias jointly contribute to the categorization of multiracial individuals. *Psychological Science, 26*(10), 1639-1645.
- Huang, L., & Galinsky, A. D. (2011). Mind–body dissonance: Conflict between the senses expands the mind’s horizons. *Social Psychological and Personality Science, 2*(4), 351-359.
- Hugenberg, K., & Bodenhausen, G. V. (2004). Ambiguity in social categorization: The role of prejudice and facial affect in race categorization. *Psychological Science, 15*(5), 342-345.
- Kleiman, T., Stern, C., & Trope, Y. (2016). When the spatial and ideological collide metaphorical conflict shapes social perception. *Psychological Science, 2*(3), 375-383.
- Kleiman, T., & Hassin, R. R. (2013). When conflicts are good: Nonconscious goal conflicts reduce confirmatory thinking. *Journal of Personality and Social Psychology, 105*(3), 374-387.
- Krosch, A. R., & Amodio, D. M. (2014). Economic scarcity alters the perception of race. *Proceedings of the National Academy of Sciences, 111*(25), 9079-9084.

- Krosch, A. R., Berntsen, L., Amodio, D. M., Jost, J. T., & Van Bavel, J. J. (2013). On the ideology of hypodescent: Political conservatism predicts categorization of racially ambiguous faces as Black. *Journal of Experimental Social Psychology, 49*(6), 1196-1203.
- Leyens, J. P., & Yzerbyt, V. Y. (1992). The ingroup overexclusion effect: Impact of valence and confirmation on stereotypical information search. *European Journal of Social Psychology, 22*, 549-569.
- Looser, C. E., & Wheatley, T. (2010). The tipping point of animacy: How, when, and where we perceive life in a face. *Psychological Science, 21*(12), 1854-1862.
- Luthanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin, 18*(3), 302-318.
- Ma, D. S., Correll, J., & Wittenbrink, B. (2015). The Chicago face database: A free stimulus set of faces and norming data. *Behavior research methods, 47*(4), 1122-1135.
- Macrae, C. N., & Lewis, H. L. (2002). Do I know you? Processing orientation and face recognition. *Psychological Science, 13*, 194-196.
- Miller, S. L., Maner, J. K., & Becker, D. V. (2010). Self-protective biases in group categorization: Threat cues shape the psychological boundary between "us" and "them". *Journal of Personality and Social Psychology, 99*(1), 62-77.
- Oakes, P. J., & Turner, J. C. (1980). Social categorization and intergroup behaviour: Does minimal intergroup discrimination make social identity more positive?. *European Journal of Social Psychology, 10*(3), 295-301.
- Pauker, K., Weisbuch, M., Ambady, N., Sommers, S. R., Adams Jr, R. B., & Ivcevic, Z. (2009). Not so black and white: Memory for ambiguous group members. *Journal of Personality and Social Psychology, 96*(4), 795-810.

- Ratner, K. G., Dotsch, R., Wigboldus, D. H., van Knippenberg, A., & Amodio, D. M. (2014). Visualizing minimal ingroup and outgroup faces: Implications for impressions, attitudes, and behavior. *Journal of Personality and Social Psychology, 106*(6), 897.
- Rees, L., Rothman, N. B., Lehavy, R., & Sanchez-Burks, J. (2013). The ambivalent mind can be a wise mind: Emotional ambivalence increases judgment accuracy. *Journal of Experimental Social Psychology, 49*(3), 360-367.
- Savary, J., Kleiman, T., Hassin, R. R., & Dhar, R. (2015). Positive consequences of conflict on decision making: When a conflict mindset facilitates choice. *Journal of Experimental Psychology: General, 144*(1), 1-6.
- Stephan, W. G., & Renfro, C. L. (2002). The role of threat in intergroup relations. In D. M. Mackie & E. R. Smith, (Eds.) *From prejudice to intergroup emotions: Differentiated reactions to social groups*, pp. 191–207. Psychology Press: New York.
- Stern, C., & Kleiman, T. (2015). Know thy outgroup: Promoting accurate judgments of political attitude differences through a conflict mindset. *Social Psychological and Personality Science, 6*(3), 950-958.
- Tajfel, H. (1970). Experiments in intergroup discrimination. *Scientific American, 223*(5), 96-103.
- Tajfel, H. (1972). La catégorisation sociale. In S. Moscovici (Ed.), *Introduction à la psychologie sociale* (pp. 272-302). Paris: Larousse.
- Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology, 33*(1), 1-39.
- Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology, 1*(2), 149–178.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.

- Tskhay, K. O., & Rule, N. O. (2013). Accuracy in categorizing perceptually ambiguous groups a review and meta-analysis. *Personality and Social Psychology Review, 17*(1), 72-86.
- Turner, J. C. (1975). Social comparison and social identity: Some prospects for intergroup behaviour. *European Journal of Social Psychology, 5*(1), 5– 34.
- Yzerbyt, V. Y., Leyens J-Ph., & Bellour, F. (1995). The ingroup overexclusion effect: Identity concerns in decisions about group membership. *European Journal of Social Psychology, 25*, 1–16.

Appendix

Materials for Study 1 [materials for the categorization task were also used in the pilot]

General instructions

This study is designed to examine how we remember events in our life. There will be several parts to this study. In the first part you will be asked to describe an event in your life. Next, you will perform a separate task on person perception. Finally, you will be asked to recall the event you described and answer several questions about it.

Please read the instructions carefully and answer the questions as honestly and sincerely as possible. Your responses will remain anonymous and their confidentiality will be strictly maintained.

Many thanks for your participation!

Demographic items

General Questions

We will start with some general questions.

DEMOGRAPHICS

Please answer the following demographic questions.

1. What is your age? _____

2. What is your gender?
 - Male
 - Female

3. What is your ethnic background? *Exclusion item (1=exclude, 2=include)
 - Hispanic or Latino
 - Not Hispanic or Latino

4. Race *Exclusion item (1= include, else=exclude)

What is your racial background?

- White
- Black / African American
- Asian
- American Indian / Alaska Native
- Native Hawaiian / Other Pacific Islander
- Multiracial
- Other
- I prefer not to answer

5. What is your country of citizenship? _____ *Exclusion item (US=include, else= exclude)

6. Are you a native English speaker?

- Yes
- No

7. How fluent of an English speaker do you consider yourself to be? *Exclusion item (>=7=include, else= exclude)

- Not at all 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- Very much 9

Moderator: Group identification

The next set of questions concerns your racial identity. Please indicate on the scale provided below the extent to which you agree or disagree with each of the following statements.

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
Overall, being White has very little to do with how I feel about myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being White is an important reflection of who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being White is unimportant to my sense of what kind of a person I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, being White is an important part of my self-image.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Manipulation: Conflict condition

Writing task

Please think about and describe a time when two of your goals that you wanted to achieve conflicted with each other. Try to think and write about a time when the goals that conflicted were both important to you. For example, a person might have strong goals to be productive at work and be involved with their family. As such, the person might write about a time when they had to choose either to stay late at work to finish a report or to go home to eat dinner with their family.

Please use the space below to write several sentences describing a situation where you experienced a conflict between two of your goals that are both important.

Please try to keep the story in mind throughout the course of the study because we will ask you questions about it later in the study.

Manipulation: Control condition

Writing task

Please think about and describe what you did this morning. For example, a person might have woken up to their alarm, showered, eaten breakfast, and then driven to work. Please use the space below to write several sentences describing your morning.

Please try to keep the story in mind throughout the course of the study because we will ask you questions about it later in the study.

Measurement of dependent variable: Categorization task

In this part, you will see a series of faces presented on the screen. Your task is to identify the race of the person.

Before each face, a "+" sign will appear at the center of the screen. Focus your eyes on this sign. After the "+" sign disappears, you will be presented with a face. You are asked to judge as quickly and as accurately as possible whether each person is white or black.

Although some faces may seem of mixed-race, you should use the racial label (Black or White) that you feel most closely reflects the person's race. Please press the "Q" key with your left index finger if the person is White, and press the "P" key with your right index finger if the person is Black.

When you are ready, place your left index finger on the "Q" key (White) and your right index finger on the "P" key (Black), and press either one of these keys to begin.

Manipulation check

Writing task – part B

At the beginning of the study, we asked you to recall and write about an event. Please think about this event again and rate how much conflict you experienced in the situation you wrote about.

Scale: 1 = did not experience conflict, 9 = experienced a lot of conflict

Attention check

People vary in the amount they pay attention to these kinds of surveys. Some take them seriously and read each question, whereas others go very quickly and barely read the questions at all. If you have read this question carefully, please write the word yes in the blank box below labeled other. There is no need for you to respond to the scale below.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- Other

Funneled debriefing

Finally, we would appreciate your answers to the following questions about the study itself.

1. What do you think the purpose of this study was?

2. Did you think that any of the tasks you did were related in any way?

- Yes
- No

In what way were they related?

3. Did anything you did on one task affect what you did on any other task?

- Yes
- No

How exactly did it affect you?

4. What were you trying to do while classifying the face pictures? Did you have any particular goal or strategy?

Materials for Study 2 [materials for the reverse correlation task were also used in the pilot]

Sample 1

Demographic items:

פריטים דמוגרפיים

לסיום, נבקש ממך למלא כמה פרטים אישיים.

שים לב: לא יעשה בפרטים האלה כל שימוש, פרט לניתוח כלל הנתונים שנאספו.

לאום: ישראלי-יהודי ישראלי-ערבי אחר (Israeli-Jew=include, else=exclude)*

מין: ז נ גיל _____

ארץ לידה _____ שנת עליה _____ שפת אם _____

הפרעות קשב וריכוז: כן לא

Manipulation:

Same as in Study 1 (translated to Hebrew).

Measurement of dependent variable: Reverse correlation task

במטלה זו אנו מעוניינים לבחון סטים של פרצופים אשר ישמשו אותנו במחקר עתידי על תפיסת פרצופים. לצורך כך, יוצגו בכל שלב במטלה שני פרצופים על המסך, אחד ליד השני. הנך מתבקש/ת לבחור במהירות מבין השניים את הפרצוף שנראה כ[ישראלי-יהודי/פלסטיני]. במידה ואינך בטוח/ה, אנא בחר/י את הפרצוף שנראה הכי דומה ל[ישראלי-יהודי/פלסטיני].

אנא לחץ/י על המקש "K" בכדי לבחור בתמונה הימנית, ולחץ/י על המקש "S" בכדי לבחור בתמונה השמאלית.

כשאת/ה מוכן/ה, הנח/הניחי את אצבעותיך על המקשים "K" ו-"S" ולחץ/י על אחד מהם על מנת להתחיל.

Funneled debriefing

אנא השב/השיבי על מספר שאלות בנוגע למחקר עצמו.

1. מה לדעתך הייתה מטרת המחקר?

2. האם לדעתך היה קשר בין חלק מהמטלות שביצעת? כן/לא
אם כן, כיצד הן היו קשורות?

3. האם משהו שעשית במטלה מסוימת השפיע על מה שעשית במטלה אחרת? כן/לא
4. כיצד בדיוק זה השפיע?

5. מה ניסית לעשות במטלה בה בחרת בפרצופים? האם הייתה לך מטרה או אסטרטגיה מסוימת?

לסיום, במידה ויש דבר מה לגבי מחקר זה או לגביך באופן אישי אשר את/ה חש/ה שהחוקרים צריכים לדעת, אנא כתוב/כתבי זאת למטה. נשמח לקבל כל סוג של הערה או הצעה אשר הנך חושב/ת שתסייע לנו.

Sample 2

Demographic items:

פריטים דמוגרפיים

לסיום, נבקש ממך למלא כמה פרטים אישיים.

שים לב: לא יעשה בפרטים האלה כל שימוש, פרט לניתוח כלל הנתונים שנאספו.

לאום: ישראלי-יהודי ישראלי-ערבי אחר *Exclusion item (Israeli-Jew=include, else=exclude)

מין: ז נ גיל _____

ארץ לידה _____ שנת עליה _____ שפת אם _____

מידת שליטה בעברית (1-----7) (>=5=include, else=exclude) *Exclusion item

הפרעות קשב וריכוז: כן לא

Measurement of dependent variable: Reverse correlation task

מחקר זה בוחן תפיסת פרצופים.

במסכים הבאים תצפה/תצפי בצמד פרצופים.

בכל פעם פרצוף אחד יסומן באמצעות ריבוע, ותבקש/י לשפוט עד כמה תכונות שונות מאפיינות פרצוף זה על גבי סולם שנע מ-1 (בכלל לא) עד 7 (במידה רבה מאוד).

בכדי להשיב - השתמש/י במספרים שבמקשי המקלדת

לחץ/י על מקש ה"רווח" על מנת להתחיל במטלה

במסכים הבאים תתבקש/י לשפוט עד כמה הפרצופים דומים לקבוצות חברתיות שונות (לחץ/י רווח)

Debriefing:

לסיום, במידה ויש דבר מה לגבי מחקר זה או לגביך באופן אישי אשר את/ה חש/ה שהחוקרים צריכים לדעת, אנא כתוב/כתבי זאת למטה. נשמח לקבל כל סוג של הערה או הצעה אשר הנך חושב/ת שתסייע לנו.

תקציר עברית

אנשים יוצרים הבדלים בין-קבוצתיים שמעדיפים את הקבוצה שלהם על פני קבוצות אחרות (קבוצות-חוץ). דבר זה מיתרגם להטיות ועיוותים בוויזואליזציה המנטלית של חברי קבוצת הפנים וקבוצת החוץ: אנשים כוללים רק פרטים פרוטוטיפיים כחברים בקבוצתם. כשמדמים כיצד חברי קבוצת הפנים והחוץ נראים, פרצופי חברי הקבוצות הללו נראים מובחנים ביותר. המחקר הנוכחי כיוון להפחתת ההבדלים הבין-קבוצתיים ובכך לצמצום הטיות ועיוותים אלו. באופן ספציפי, המחקר בחן את השפעה של קונפליקט פנימי בין מטרות, אשר נמצא כמפעיל מיינדסט (דפוס חשיבה) כללי המרחיב את הגבולות הנתפשים של קטגוריות קוגניטיביות (כלומר, מיינדסט קונפליקט), על הרחבת הייצוגים הוויזואליים של קבוצות הפנים והחוץ. על ידי הרחבת הגבולות הוויזואליים של כל קבוצה, הקבוצות הללו אמורות להיות קרובות יותר ולכן דומות יותר. שני ניסויים תוכננו לשם מטרה זו. ניסוי 1 בחן החלטות לגבי קטגוריזציה (סיווג) לקבוצות: משתתפים צפו ברצף פרצופים ממוזגים אשר נע מחבר פרוטוטיפי בקבוצת הפנים לחבר פרוטוטיפי בקבוצת החוץ, והתבקשו לסווג את הפרצופים לקבוצת פנים/חוץ. שוער כי תחת מיינדסט קונפליקט אנשים יהיו יותר מוכנים לסווג חברי קבוצה פחות פרוטוטיפיים כחברי קבוצת הפנים, כיוון שהרחבת גבולות יוצרת קבוצות מכלילות יותר. ניסוי 2 בחן כיצד אנשים מדמים (עושים ויזואליזציה) פרצופים של קבוצות הפנים והחוץ תחת מיינדסט קונפליקט לעומת תנאי ביקורת. משתתפים צפו בצמדי פרצופים עם מאפייני-פנים שונים, והתבקשו לבחור את הפרצוף הדומה לחבר קבוצת הפנים (חוץ). כאן, שוער כי תחת מיינדסט קונפליקט פרצופי קבוצות הפנים והחוץ ייראו דומים יותר האחד לשני. בניגוד לניבויים הללו, תוצאות שני הניסויים לא הראו השפעה של מיינדסט קונפליקט על ייצוגים ויזואליים בין-קבוצתיים. הצעות לתנאים מגבילים עבור אפקט זה בייצוגים ויזואליים כמו גם נושאים מתודולוגיים שיש לשקול בבחינות מסוג זה נדונו.

השפעת מיינדסט קונפליקט על ייצוגים מנטליים ויזואליים של קבוצת הפנים והחוץ

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