Fading Affect Bias in Intergroup Relations: The Role of Intergroup Contact in Fading Outgroup Affect

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Conflict of Interest

All authors declare that there are no conflicts of interest.

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Author Contribution

Michèle Birtel designed the study and collected the data. Michèle Birtel, Gian Antonio Di Bernardo and Loris Vezzali conducted the statistical analysis and interpreted the data. Michèle Birtel and Gian Antonio Di Bernardo wrote the manuscript. Loris Vezzali contributed to revising the drafts of the manuscript. All authors approved of the final version. Data and materials are available upon request to the corresponding author.

Abstract

Negative affect associated with autobiographical events fades faster over time than positive affect. This Fading Affect Bias (FAB) has been established in the individual and interpersonal domains. Two studies tested the FAB in intergroup relations with Muslims (*N*= 76 White British non-Muslim) and opposite gender (*N* = 242 women and men) as target outgroups. The results indicated that the FAB exists in an intergroup context, for both ingroup and outgroup memories. Mediation analyses showed that intergroup contact is related to a lower fading of positive affect associated with the outgroup memory, through greater memory strength and a more positive outgroup member evaluation. The findings are important for understanding affect associated with intergroup memories and the buffering effect of positive contact.

Keywords: fading affect bias, intergroup relations, prejudice, affect, memory

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Negative experiences and associated emotions can have a powerful and stronger impact than positive experiences (Baumeister et al., 2001; Rozin & Royzman, 2001). In human memory, this power dynamic is reversed (for a review see Sedikides & Skowronski, 2020), in that negative affect associated with autobiographical events fades faster over time than positive affect, an effect that has been labelled Fading Affect Bias (FAB; Walker et al., 2003; Walker et al., 1997). The FAB has been consistently demonstrated in the individual (Skowronski et al., 2014) and also interpersonal (e.g., Zengel et al., 2019) domains, but not regarding intergroup memories.

As emotions play a key role in intergroup relations (Mackie et al., 2000; Pettigrew & Tropp, 2008), we examined whether the FAB also exists in intergroup relations. Individuals show a positivity bias towards the ingroup and a negativity bias towards the outgroup in their evaluations, behavior, memory and language (Hewstone et al., 2002). Negative intergroup encounters often appear to be a stronger predictor of prejudice than positive encounters (Barlow et al., 2012). Intergroup memory content seems to be affected by an individual's social identity (Rotella & Richeson, 2013; Sahdra & Ross, 2007).

Firstly, we tested the competing predictions from the literatures on autobiographical memories versus intergroup relations with regards to the existence and nature of the FAB in relation to ingroup and outgroup memories. Specifically, we examined the possibilities that the FAB either a) is independent of an intergroup context, in such that outgroup memories follow a similar pattern as in other social contexts, as the FAB literature would predict, or b) shows a smaller effect for outgroup memories than an ingroup FAB due to a larger fading of pleasant

affect and smaller fading of unpleasant affect, as the intergroup relations literature would predict. Secondly, we tested the buffering role of prior positive intergroup contact in outgroup memory and fading outgroup affect. As contact can promote more positive intergroup relations, we examined whether it is also associated with a lower faded positive affect between past and current outgroup memories.

The Fading Affect Bias

In human memory, good is stronger than bad, both in terms of memory strength and affect (Sedikides & Skowronski, 2020). Not only do healthy individuals tend to remember positive personal events from their past better than negative events (Walker et al., 2003), the intensity associated with positive and negative events varies over time, with emotions associated with positive events being reported as stronger than emotions associated with negative events. In other words, the intensity with which emotions fade after a personal event varies with its valence, with negative emotions fading faster than positive emotions (the FAB; Walker et al., 1997). The first FAB evidence goes back to the 1930s in which researchers compared the number of positive vs negative events. They discovered in a study across two timepoints that participants who were asked to record pleasant and unpleasant events during a holiday showed a better memory for the pleasant than the unpleasant events six weeks later (Meltzer, 1930; 1931). Furthermore, considering intensity and affect change, early evidence showed that affect associated with events generally faded when remembering them three weeks later, and that negative affect faded quicker than positive affect (Cason, 1932). Walker et al. (1997) conducted three studies to test the FAB over three retention intervals: 3 months, 1 year and 4.5 years. Participants were asked to use a diary to write down one personal event each day during these periods. The results showed that, for both pleasant and unpleasant affect, initial affect was

reported with greater intensity than current affect. Also, pleasant events were remembered better than unpleasant events. Finally, whereas affect for both pleasant and unpleasant events faded with increasing the retention interval, it demonstrated a differential fading of affect, with affect associated with unpleasant events fading faster than affect associated with pleasant events.

The FAB has been established in studies with various designs (see also Ritchie et al., 2006, 2015). Specifically, research has investigated this differential fading of emotions with various research methods such as retrospective single sessions involving recalling autobiographical events (Ritchie et al., 2015; Walker et al., 2003; Walker et al., 2014) as well as diary studies over time recording autobiographical events on the day they occurred (Holmes, 1970; Gibbons et al., 2011; Ritchie & Batteson, 2013; Walker et al., 1997). Ritchie et al. (2015) have demonstrated the cross-cultural existence of the FAB in 2,400 autobiographical events (N = 562 participants) across ten cultures from majority and minority groups in USA, UK, Africa, New Zealand, Germany, and Ireland. They argue that the FAB can be seen as an intrapersonal process and strategy to regulate one's emotions. In line with emotion regulation strategies, the FAB may involve a cognitive reappraisal of events and associated feelings from the past. A range of moderators of the FAB have been examined (for a review see Skowronski et al., 2014).

Summarizing the evidence, previous studies provide support for the idea that affect associated with positive events and affect associated with negative events may not only be remembered differently but also show a differential fading. Even though the FAB is established on individual and interpersonal level, no prior research to our knowledge has examined this FAB in an intergroup context. Previous research suggests that the FAB generally applies to social interactions (Ritchie et al., 2006; Walker et al., 2006), and the intergroup relations literature points to the fact that interpersonal and intergroup interactions are of different nature and quality

involving intergroup biases and with these unique relations. In the present research, we examined both positive and negative autobiographical memories in intergroup relations related to ingroup and outgroup members.

Autobiographical Memories and Intergroup Relations

In intergroup relations, individuals show a positivity bias towards the ingroup (Hewstone et al., 2002). This bias manifests itself in various ways, for example, individuals evaluate and treat the ingroup more positively than the outgroup (ingroup favoritism, e.g., Tajfel et al., 1971), or can even participate in negative behavior towards the outgroup (outgroup derogation, Brewer 2001; Mummendey & Otten 2001). This intergroup bias appears stronger when allocating positive than negative resources to the ingroup (positive-negative asymmetry, Mummendey & Otten, 1998). Studies also point towards a positive-negative contact asymmetry, in that negative contact generally has a stronger association with increased prejudice than positive contact has with reduced prejudice (Barlow et al., 2012; Graf et al., 2014; Meleady & Forder, 2018). People's memory for ingroup faces appears to be more accurate than their memory for outgroup faces in face recognition tasks (cross-race effect, for a meta-analysis see Meissner, & Brigham, 2001). Furthermore, intergroup memory content is also affected by social identity, i.e., whether one belongs to the ingroup or the outgroup. For example, memory for wrongdoings perpetrated by the ingroup has shown to be poorer than those transgressions by an outgroup perpetrator (Rotella & Richeson, 2013). Furthermore, those who were primed with their ingroup identity reported lower collective guilt (Rotella & Richeson, 2013) and showed a poorer memory for violence and hatred committed by ingroup members (Sahdra & Ross, 2007) than those in the low identity condition.

Whereas affect associated with ingroup memories may follow the traditional FAB pattern, affect associated with outgroup memories may show a smaller effect due to a larger fading of positive outgroup affect and smaller fading of negative outgroup affect. In fact, outgroups are perceived more negatively and there are motivational factors pointing to preserving a positive image of the ingroup (Tajfel & Turner, 1979).

Intergroup Contact and Fading Outgroup Affect

We also tested whether there are factors associated with a lower fading of positive outgroup affect in order to promote more positive intergroup relations. In line with literature showing that positive contact can promote positive intergroup relations, prior positive contact experiences may be associated with a lower fading of positive outgroup affect. A wealth of research has shown that positive intergroup contact can reduce intergroup bias and improve relations between conflicting ingroups and outgroups (Allport, 1954; for a review see Pettigrew & Tropp, 2011; for a meta-analysis see Pettigrew & Tropp, 2006), in particular through the highest quality form of contact, cross-group friendships (Davies et al., 2011). Emotions play an important role in intergroup relations (Mackie et al., 2000), and specifically for intergroup contact. Contact largely reduces prejudice through an affective route. Intergroup anxiety (Stephan & Stephan, 1985; Swart et al., 2011; Turner et al., 2007) and empathy (Swart et al., 2011; Turner et al., 2013) have been identified as two major mediators of the relationship between contact and more positive intergroup relations (for a meta-analysis see Pettigrew & Tropp, 2008). In this research, we examined whether prior contact experiences are associated with a lower fading of positive outgroup affect. Whereas the traditional intergroup relations literature tested mediators such as intergroup anxiety or empathy (Pettigrew & Tropp, 2008), we tested a mediator relevant to the memory literature, i.e., evaluation of the outgroup member in

the memory. The hypothesis was that a positive evaluation of the outgroup member could be associated with a lower fading of positive affect related to the entire outgroup.

Positive personal events seem to be recalled better than negative ones, which may be due to motivational and cognitive processes (Lindeman et al., 2017; Skowronski, 2011). Our research contributes to the literature examining the relation between the FAB and memory strength. Recently, a causal link between the FAB and memory quality has been suggested. Ritchie & Battesen (2013) examined the colorfulness of memories and found that the FAB may be caused by negative memories losing more episodic detail over time than positive memories. Following their results, Lindeman et al. (2017) tested memory strength in form of perceived memory vividness, greater vividness indicating greater retainment of episodic details. Therefore, we included memory strength as a potential mediator between contact and positive outgroup affect change.

The Present Research

The present research had two major aims. Firstly, the literatures on autobiographical memories and on intergroup relations allow different predictions on the existence and nature of the FAB in intergroup relations. Our research aimed at testing these competing hypotheses. Secondly, we tested whether positive intergroup contact is associated with a lower fading of positive outgroup affect via a more positive evaluation of the outgroup member.

Firstly, we examined whether there is a FAB in intergroup relations (Studies 1 and 2), testing the competing predictions from the FAB and the intergroup relations literatures. To establish an intergroup context, these events participants were asked to recall and evaluate focused on memories involving ingroup and outgroup members. On the one hand, the intergroup relations literature suggests that individuals show a positivity bias towards the ingroup and a

negativity bias towards the outgroup (Hewstone et al., 2002), and that negative outgroup encounters can have a stronger impact than positive encounters (Barlow et al., 2012; Graf et al., 2014; Meleady & Forder, 2018). Specifically, there could be a FAB in memory for events associated with an ingroup member, replicating previous FAB research, and a smaller FAB in memory for events associated with an outgroup member due to a larger fading of pleasant affect and smaller fading of unpleasant affect (H1a). On the other hand, affect has been shown to fade over time independently of the autobiographical event (Ritchie et al., 2006). Therefore, there could be a FAB independently of ingroup and outgroup event. In other words, if the intergroup context can rather be seen as other autobiographical memories on social interactions, then the FAB for outgroup events should be present with the same differential pattern, i.e., emotions associated with negative contact memories decrease more quickly than emotions associated with positive contact memories (H1b).

Although it has been shown that not all memories are remembered with the same strength, and that there is a positivity bias in the strength with which autobiographical memories can be remembered (e.g., D'Argembeau & Van der Linden, 2008; Ritchie et al., 2017), little attention has been paid to linking memory strength and the FAB (see Lindeman et al., 2017; Ritchie & Battesen, 2013). We predicted that positive memories will be remembered more strongly than negative memories (Walker et al., 2003; Walker et al., 1997).

Secondly, we tested the role of positive intergroup contact, and the relative mechanisms, in outgroup memory and faded outgroup affect (Study 2), specifically we tested a mediator from the memory literature (memory strength) and a mediator from the intergroup relations literature (evaluation of outgroup member). Given the well-established relationship between intergroup contact and more positive intergroup relations (Pettigrew & Tropp, 2006, 2008), we

hypothesized that contact will slow down the fading of positive affect associated with outgroup memories through greater memory strength (mediator 1, H2a) and a more positive evaluation of the outgroup member in the memory (mediator 2, H2b).

We have chosen to focus this first test of the FAB in intergroup relations on religion (Study 1) and gender (Study 2). Muslims are with 4.8% the largest religious minority group in England/Wales (Office for National Statistics, 2011) and have been target of a rising number of hate crimes (Home Office, 2019). In the relations between Muslims and non Muslims in the UK, there is a clear distinction between minority and majority group in terms of status, power, and number. In the relations between women and men in the UK, there are still differences in status and power, however the distribution of number is fairly equal.

Study 1

In Study 1 we tested the basic FAB effect in an intergroup context, focusing on prejudice towards Muslims. In line with the FAB literature, we asked participants to recall both positive and negative autobiographical memories. These memories focused on memories involving ingroup and outgroup members. Participants were asked to recall either a positive/negative ingroup event (interaction with a White British person) or outgroup event (interaction with a Muslim). The study received ethical approval from the local institutional ethics committee.

Method

Participants

Participants were recruited in the United Kingdom via the university's participant recruitment system as well as social media. An a priori power analysis using GPower (Faul et al., 2007) with an alpha of .05, a medium effect size of Cohen's $f = .25$ and a power of .80 for a repeated-measures ANOVA yielded an overall sample size of $N = 34$. Seventy-six White British

non-Muslim participants (60 women, 16 men), aged between 18 and 46 years (M_{age} = 21.01, *SD* = 4.02) completed the online study.

Design and Procedure

We used a within-participants design with time of affect (past versus current), event valance (positive versus negative) and group (ingroup versus outgroup) as the independent variables. Participants were asked to remember and describe four events (see e.g., Ritchie et al., 2015): positive ingroup, negative ingroup, positive outgroup and negative outgroup. They received the following instruction for the events: "We would like you to remember a situation in which you had a [positive, negative] interaction with a [White British, Muslim]. Please describe this event in as much detail as possible, including who you interacted with, what happened, when the interaction occurred, and where. Please note that the interaction can include either a friend or a stranger." For the dependent measures, after each event description, participants reported their past and current affect strength associated with the event as well as the perceived memory strength. Prior to starting the survey, participants were provided with information, and consent was obtained. At the end of the survey, participants were thanked and debriefed.

Measures[1]

Memory strength. For each of the four events, participants were asked to report how well they remember the event they just reported on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*perfectly*) (Walker et al., 1997).

Affect associated with memory. Participants rated the affect associated with each of the four events at its occurrence (past affect) and at present (current affect). To rate the *past affect*, participants were asked "Thinking about your past feelings: When the contact with this person happened, how pleasant [unpleasant] did it make you feel?", to rate the *current affect*,

participants were asked "Thinking about your current feelings: When you remember the contact with this person now, how pleasant [unpleasant] does it feel remembering it?". For positive memories pleasant affect was measured, for negative memories unpleasant affect was measured. Ratings included a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*very much*) (see also Ritchie et al., 2015).

Results

Memory Strength

First, we tested whether there are differences in the perceived strength with which the events are remembered, specifically whether the strength is dependent upon valence (positive versus negative) and group status (ingroup versus outgroup). A 2 (Group: ingroup vs. outgroup) × 2 (Valence: positive memory vs. negative memory) repeated-measures ANOVA revealed significant differences in the strength with which participants remembered the four events. Specifically, there was a main effect of valence, $F(1, 75) = 23.98$, $p < .001$, $\eta_p^2 = .24$. Positive memories were perceived to be remembered better ($M = 5.93$) than negative memories ($M = 5.41$), for both ingroup and outgroup. Furthermore, there was a main effect of group, $F(1, 75) = 20.80$, $p < .001$, $\eta_p^2 = .22$. The ingroup events were perceived to be remembered better ($M = 5.99$) than the outgroup events ($M = 5.36$), for both positive and negative memories. The interaction Group × Valence was not significant, $F(1, 75) = 3.18$, $p = .079$, $\eta_p^2 = .04$.

Affect Intensity

We predicted that the intensity of affect would be greater for past than for current affect. Paired *t*-tests were conducted using an average score of affect intensity for past ratings and an average score for current ratings. As expected, current affect was rated as significantly less extreme than past affect, for both positive ($M_{past\_pos} = 6.20$, $SD = 0.73$; $M_{current\_pos} = 6.07$, $SD =$

0.78, $t(75) = 2.13$, $p = .036$), and negative events ($M_{past\_neg} = 5.24$, $SD = 1.28$; $M_{current\_neg} = 4.36$, $SD = 1.49$, $t(75) = 7.02$, $p < .001$).

Fading Affect Bias

Four scores reflecting the affect change were created by subtracting the current affect from the past affect score (see e.g., Zengel et al. 2019), separately for positive/negative ingroup/outgroup memories. Greater scores reflect greater faded affect from past to current affect.

To test whether the FAB occurs (H1b) or shows a smaller effect (H1a) for outgroup memories, affect change scores were submitted to a 2 (Group: ingroup vs. outgroup) × 2 (Valence: positive memory vs. negative memory) repeated-measures ANOVA, with both factors as within-participants variables. The results revealed a main effect of the Valence, $F(1, 75) = 30.18$, $p < .001$, $\eta_p^2 = .29$, indicating, regardless of the group of the recalled person, a greater affect change for negative memories ($M = 0.88$) compared with positive ones ($M = 0.13$). Neither the main effect of Group nor the Group × Valence interaction turned out being significant, Fs(1, 75) < 2.74, ps > .05. Thus, we found a FAB for memories regardless of group membership, such that the past affect associated with the negative memory faded more quickly than the one associated with the positive one, both for ingroup and outgroup (H1b).[2]

Discussion

Replicating findings from the memory literature, positive memories were perceived to be remembered more strongly than negative memories, and affect intensity was greater for past than for current affect (Walker et al., 2003; Walker et al., 1997). Additionally, the ingroup event was remembered with greater strength than the outgroup event, in line with preferential attention for the ingroup from previous intergroup relations research (Hewstone et al., 2002).

Testing the competing hypotheses from the intergroup contact literature (H1a) and the autobiographical memory literature (H1b), we found support for H1b. Our results showed a FAB indeed exists also in intergroup contexts, affect relating to negative memories faded faster than affect associated with positive memories for both ingroup and outgroup memories. Interestingly, this FAB effect existed independently of group status. This is in line with research on autobiographical memories that faded affect generally applies to social interactions (Ritchie et al., 2006; Walker et al., 2006) and is independent of the type of event recalled (Walker et al., 2006). Whereas Study 1 provides initial evidence that the FAB exists in an intergroup context and follows the traditional FAB pattern, Study 1 did not take into account the role of prior positive intergroup contact experiences, which Study 2 aimed at testing.

Study 2

We sought to replicate the findings of Study 1, using gender as the intergroup variable. Importantly, Study 2 was designed to test the role of prior intergroup contact in intergroup memory affect, as well as the role of outgroup member evaluation as mediating variable. As a wealth of research has shown the positive impact of intergroup contact on intergroup relations (see Pettigrew & Tropp, 2006, 2008) and the power of positive affect in autobiographical memory (e.g., Walker et al., 2003; Walker et al., 1997), positive intergroup contact may slow down, i.e., buffer, the fading positive affect associated with outgroup memories over time. We predicted a positive association between contact and memory strength (H2a) as well as the evaluation of the outgroup member in the positive memory (H2b), and in return a lower positive faded affect, with effects mediated by a more positive outgroup evaluation.

Method

Participants

Participants were recruited in the United Kingdom using Prolific and the university's participant recruitment system. For the mediation analyses, the sample size required to detect a medium effect for both α and β paths using the percentile bootstrap test of mediation with a power of .80 is $N = 78$ (Fritz & MacKinnon, 2007). In total, 242 participants (153 women and 89 men) aged between 18 and 63 years ($M_{age} = 33.07$, $SD = 12.93$) completed the online study. The study received ethical approval from the local institutional ethics committee.

Design and Procedure

In Study 2, a person of the opposite gender was the target outgroup, i.e., for women the outgroup was men, for men the outgroup was women. The participant information sheet outlined the inclusion criteria as "you must identify as female or male". Additionally, participants had to select whether they were female or male prior to commencing the study. Participants were asked to report their contact quantity and quality with the outgroup. As in Study 1, then they also wrote down four events. To control for closeness of the person in the memory, we randomly allocated participants to one of two proximity of group member conditions: proximate/friend vs distant/acquaintance of the person in the memory. Among the 153 women, 79 completed the friend condition and 74 the acquaintance condition. Among the 89 men, 43 completed the friend condition and 46 the acquaintance condition. They received the instruction to remember a situation in which they had a positive and negative interaction with an ingroup (same gender) and outgroup (opposite gender) member, and were asked to describe this event in as much detail as possible, including who they interacted with, what happened, when the interaction occurred, and where. The four event blocks were presented in randomized order. Ethical procedures were followed as in Study 1.

Measures[1]

Memory strength as well as past and current affect associated with the events were measured as in Study 1, with the opposite participant gender as the target outgroup.

Contact quantity. Participants reported their frequency of outgroup contact on three items on a 7-point Likert scale ("In everyday life, how frequently do you have contact with men [women]?", "In everyday life, how frequently do you talk with men [women]?", "In everyday life, how frequently do you spend time with men [women]?"; 1 = *never* to 7 = *very often,* Voci & Hewstone, 2003). The mean of these items yielded a reliable scale score of contact quantity (Cronbach's $\alpha = .94$).

Contact quality. Participants were asked to rate on six items how *superficial-deep, natural-forced, unpleasant-pleasant, competitive-cooperative, intimate-distant, equal-unequal* they characterize their contact with men [women] on a semantic differential. On the 7-step scale, 1 indicated the lower quality pole and 7 the higher quality pole (Islam & Hewstone, 1993). Items were recoded such that higher scores represented higher contact quality. A composite contact quality score was created by the mean of these items (Cronbach's $\alpha = .79$).

Evaluation of person in memory. For each of the four events, participants stated their feelings towards the person they have encountered on a 100-point feeling thermometer ranging from 0 (*very cold*) to 100 (*very warm*) (Haddock et al., 1993). Four separate scores reflecting the evaluation of the person for the associated events were created.

Results

Means, standard deviations and correlations are reported in Table 1.[2]

Memory Strength

First, we tested whether there are differences in the perceived strength with which the events are remembered, specifically whether the strength is dependent upon valence (positive

versus negative) and group status (ingroup versus outgroup). A 2 (Group: ingroup vs. outgroup) × 2 (Valence: positive memory vs. negative memory) repeated-measures ANOVA revealed significant differences in the strength with which participants remembered the four contact events. Specifically, there was a main effect of Valence, $F(1, 241) = 48.27$, $p < .001$, $\eta_p^2 = .17$. Positive memories were perceived to be remembered better ($M = 6.18$) than negative memories ($M = 5.69$), for both ingroup and outgroup contact. There was no main effect of Group or Group x Valence interaction, Fs$(1, 241) < 0.18$, *ns.*

Affect Intensity

We predicted that the intensity of affect would be greater for past than for current affect. Paired *t*-tests were conducted using an average score of affect intensity for past ratings and an average score for current ratings. As expected, current affect was rated as significantly less extreme than past affect, for both positive ($M_{past\_pos} = 6.34$, $SD = 0.70$; $M_{current\_pos} = 6.20$, $SD = 0.81$, $t(241) = 3.73$, $p = < .001$) and negative events ($M_{past\_neg} = 5.86$, $SD = 1.16$; $M_{current\_neg} = 4.76$, $SD = 1.40$, $t(241) = 13.55$, $p < .001$).

Fading Affect Bias

To test whether the fading affect bias occurs or shows a smaller effect for outgroup memories, affect change scores were submitted to a 2 (Group: ingroup vs. outgroup) × 2 (Valence: positive memory vs. negative memory) repeated measures ANOVA, with Group and Valence factors as within-participant variables, considering affect change scores as dependent variable. The results replicated the results from Study 1, that is, a main effect of Valence, $F(1, 241) = 125.02$, $p < .001$, $\eta_p^2 = .34$, indicating a greater faded affect for negative memories ($M = 1.09$) compared with positive contact memories ($M = 0.14$) for both ingroup and outgroup. No other effects (i.e., Group main effect, interactions) emerged as significant, Fs$(1, 241) < .81$, *ns*.

Again, we found a fading affect bias for intergroup memories, such that the past affect associated with the negative memory faded more quickly than the one associated with the positive one, and this FAB effect existed independently of group status (H1b).[2]

Secondary Analyses

In order to test whether closeness of the person in the memory makes a difference, the two proximity conditions (proximate/friend vs distant/acquaintance of the person in the memory) were compared. Two separate 2 (Group: ingroup vs. outgroup) × 2 (Valence: positive memory vs. negative memory) × 2 (Proximity: friend vs. acquaintance) mixed model ANOVAs were carried out, with Group and Valence factors as within-participant variables and Proximity as between-participant factor, considering memory strength and affect change as the dependent variables. As in the main analysis, there was a main effect of Valence for memory strength ($F(1, 240) = 48.21$, $p < .001$, $\eta_p^2 = .17$) and affect change ($F(1, 240) = 125.24$, $p < .001$, $\eta_p^2 = .34$). Regardless of group belonging of the recalled person or proximity of the group member, positive memories were perceived to be remembered better ($M = 6.18$) than negative memories ($M = 5.70$), for both ingroup and outgroup contact, and there was a greater faded affect for negative contact memories ($M = 1.09$) compared with positive contact memories ($M = 0.14$) for both ingroup and outgroup contact. No other effects (i.e., Group main effect, Proximity main effect, interactions) emerged as significant for memory strength (Fs$(1, 240) < 1.42$, *ns*) and affect change (Fs$(1, 240) < 1.93$, *ns*).

Intergroup Contact and Affect Change

We also tested the role of positive intergroup contact in memory and affect change, specifically, we tested whether contact has a positive effect on people's memory with outgroup contact and affect associated with this contact. For this purpose, we multiplied contact quantity

and contact quality in line with previous research (Voci & Hewstone, 2003). Similar results are yielded when using contact quantity and quality in separate mediation analyses.

Memory strength. We computed mediation analyses to assess whether there is an indirect effect of contact on positive outgroup affect change via perceived memory strength, using the PROCESS macro for SPSS (Hayes, 2019, Model 4). Prior contact was the predictor, the memory strength of the positive outgroup memory was the mediator, and the affect change associated with the positive outgroup memory was the criterion variable. The significance of the mediation was tested using bootstrapping procedure with 5000 resamples. The results can be found in Table 2. Greater contact was associated with higher perceived memory strength (B = .03, SE = .01, p < .0001), higher memory strength was associated with lower positive outgroup faded affect (B = -.11, SE = .05, p = .022). There was a significant indirect (but not direct) effect of contact on positive outgroup affect change, through memory strength. Contact was associated with a decreased affect change for the positive memory (exclusively) through the indirect effect of memory strength. In sum, the relationship between contact and positive outgroup affect was mediated by perceived outgroup memory strength (H2a). We also computed a mediation analysis for negative outgroup affect change as criterion variable. The pattern of findings emerged is not consistent with mediation (see Table 3).

Outgroup member evaluation. We then computed similar mediation analyses to assess whether there is an indirect effect of contact on positive outgroup affect change via evaluation of the outgroup member in the positive memory. Prior contact was the predictor, evaluation of the outgroup member of the positive memory was the mediator, and the affect change associated with the positive outgroup memory was the criterion variable. The results can be found in Table 2. Greater contact was associated with more positive outgroup member evaluation (B = .50, SE

= .10, $p < .0001$), more positive outgroup member evaluation was associated with lower positive outgroup faded affect (B = -.01, SE = .003, p = .010). There was a significant indirect (but not direct) effect of contact on positive outgroup affect change, through more positive outgroup member evaluation. Contact was associated with a decreased affect change for the positive memory (exclusively) through the indirect effect of outgroup member evaluation. In sum, the relationship between contact and positive outgroup affect was mediated by outgroup member evaluation (H2b). We also computed a mediation analysis for negative outgroup affect change as criterion variable, there was no significant mediation, for results see Table 3.

Discussion

Replicating findings from Study 1 and the autobiographical memory literature, positive memories were perceived to be remembered better than negative memories, affect intensity was greater for past than for current affect, and a FAB existed in an intergroup context, independently of group (H1b). Our findings are in line with the autobiographical memory literature suggesting faded affect is independent of the type of memory (Walker et al., 2006).

Study 1, but not Study 2, found a significant main effect of group on memory strength, i.e., ingroup events were perceived to be remembered better than the outgroup events. Study 1 focused on religion and participants were from the majority group (White British non-Muslim), Study 2 focused on gender and had participants from both groups (men and women). The type of events reported for ingroup and outgroup memories did not appear to differ. An explanation for the differential finding of the group main effect for memory strength may be that meeting a person of opposite gender is common on a daily basis (contact quantity Study 2: M = 6.02, SD = 1.27), while meeting a non Muslim should be less common (contact quantity Study 1: M = 3.72, SD = 1.66). Category salience may differ when interacting with a Muslim vs. opposite gender,

and remembering Muslim (outgroup) memories may be more difficult than British (ingroup) memories, while remembering men and women memories may be equally difficulty/easy.

We also tested whether psychological closeness of the person in the memory makes a difference. In other words, we sought to control whether the recalled person is an ingroup/outgroup friend or acquaintance. According to the contact literature, outgroup friends are a more positive, intimate and high-quality form of contact than outgroup acquaintances (Davies, Tropp, Aron, Pettigrew, & Wright, 2011), hence positive affect may fade slower for an outgroup friend than an outgroup acquaintance. In line with this prediction, previous research suggests that intimacy plays a role in intergroup contact, maximizing the benefits of positive contact on intergroup relations. Fuochi, Voci, Boin, and Hewstone (2020) found that positive intimate contact predicted positive outgroup attitudes more than negative intimate contact predicted negative outgroup attitudes. However, according to the autobiographical memory literature, this distinction should not make a difference for the FAB (Walker, Skowronski, Gibbons, & Vogl, 2006). Indeed, our results confirmed this, suggesting that the FAB is a powerful effect.

Furthermore, we found evidence that contact is associated with a lower faded positive affect of outgroup memories, via perceived memory strength and outgroup member evaluation (supporting H2a, H2b), but is not associated with a lower faded negative affect. Greater quality and quantity of prior intergroup contact was associated with a lower faded positive affect between past and current ratings of the outgroup memory. This association was mediated through a more positive evaluation of the outgroup member in the memory. Prior intergroup contact may play a role in preventing positive affect associated with outgroup memories to fade over time. These findings are in line with research showing that contact has a positive impact on intergroup

relations (Pettigrew & Tropp, 2006, 2008), and the power of positive affect in autobiographical memories (Walker et al., 2003; Walker et al., 1997).

General Discussion

The intergroup literature and the literature on autobiographical memories allow different predictions on the fading of affect over time in intergroup relations. The present research aimed at testing competing predictions from the autobiographical and intergroup relations literature on the existence and nature of a FAB in intergroup relations. Two studies were conducted to test whether a FAB exists in intergroup relations, as well as the potential of intergroup contact being associated with faded positive affect of outgroup memories. We draw conclusions about the findings in terms of the competing predictions and the role of intergroup contact in intergroup affect change, as well as the implications for prejudice-interventions. Finally, we acknowledge limitations of the presented research and recommend directions for future research on the FAB in intergroup relations.

Affect Change in Intergroup Relations

Across two studies, we replicated previous findings on the FAB from the autobiographical memory literature in a novel context, an intergroup context. We found evidence for predictions from the autobiographical memory literature (H1b) instead of the intergroup contact literature (H1a). The differential fading of affect associated with intergroup memories depends on the valence of the memory, with affect associated with negative memories fading faster over time than affect associated with positive memories, independently of ingroup or outgroup content. This is in line with findings that the FAB exists in in social interactions (Ritchie et al., 2006; Walker et al., 2006), and other evidence that the FAB is not dependent on what type of events are recalled, in our case events associated vs. not associated with an

intergroup context (Walker et al., 2006). In contrast with predictions from the intergroup relations literature, we did not find that affect associated with autobiographical events including outgroup members may show a weaker pattern.

In this research, we tested competing predictions of the FAB and intergroup relations literatures. The findings support the predictions from the FAB literature, indicating that affect follows patterns that are powerful and independent of the type of social situation. Although individuals' general emotions may be more negative towards outgroup than ingroup members, and this intergroup bias may lead them to display certain discriminatory behaviors in the situation, the affect associated with memories and the way such situations are remembered may follow patterns typical for the fading affect bias.

On an individual level, individuals are motivated to reduce negative affect to maintain a positive view of the self. In an intergroup context, individuals are motivated to reduce negative affect and maintain a positive view of the ingroup. This can be either in form of ingroup favoritism (i.e., viewing the ingroup more positively than the outgroup) or outgroup derogation (i.e., acting on negative affect towards the outgroup to harm the outgroup). Generally, bias is often expressed more in terms of ingroup love than outgroup hate (Brewer, 1999). The strategy of outgroup derogation can explain more severe prejudice in particularly high conflict settings (e.g., Israeli-Palestinian conflict) that are perceived as win-or-lose situations. In our research, we focussed on everyday prejudice, in which the strategy of ingroup favouritism seems more relevant. Future research should explore if there is a differential pattern of the FAB in intractable conflict settings. In such settings, ingroups may be motivated to view the outgroup more negatively.

The Role of Intergroup Contact and Prejudice in Affect Change

Our findings further emphasize that positive intergroup contact may have a buffering role, being associated with a lower fading of positive outgroup affect over time through greater memory strength (H2a, a mediator from the memory literature) and a more positive evaluation of the outgroup member in the memory (H2b, a mediator from the intergroup relations literature). Our results are in line with the literature on positive contact and intergroup experiences (Pettigrew & Tropp, 2006, 2008), and the power of positive affect in autobiographical memories (Walker et al., 2003; Walker et al., 1997).

We tested whether positive contact has a positive effect on affect associated with this contact. While positive contact may be able to buffer the effects of negative contact, and negative contact may be able to facilitate the effects of positive contact (Árnadóttir, Lolliot, Brown, & Hewstone, 2018; Birtel & Crisp; 2012), no research to date has tested whether contact has similar effects for affect associated with contact (i.e., a buffering effect for positive affect and a facilitating effect for negative affect). Predictions from intergroup contact theory suggest that positive contact can promote a positive evaluation of the outgroup member and positive affect. Therefore, in H2 we tested whether positive contact is associated with a lower faded positive affect via a more positive outgroup member evaluation. Positive contact may not be enough to facilitate the fading of negative affect.

Implications

Although it is established that positive contact can reduce prejudice and promote more positive attitudes towards outgroups, there is research suggesting that negative contact may have a stronger negative effect on intergroup experiences. The contact literature has measured the quality of intergroup contact by using a scale ranging from lower quality to higher quality as an indicator for positive contact (for a meta-analysis see Pettigrew & Tropp, 2006). However, lower

quality does not necessarily equal negative contact. Therefore, it has been argued that in order to understand the effects of both positive and negative contact, they need to be measured separately on scales capturing the intensity of positivity and the intensity of negativity of contact (Barlow et al., 2012; Graf et al., 2014). For example, Barlow et al. (2012) conducted three studies with prejudice towards Black Australians, Muslim Australians and asylum seekers and found evidence that the relationship between contact quantity and prejudice is moderated by contact valence. Frequent negative contact predicted enhanced prejudice and avoidance intentions more strongly than frequent positive contact predicted reduced prejudice and avoidance intentions. A cross-cultural study by Graf et al. (2014) across five European countries replicated this asymmetry in that negative contact was a stronger predictor of outgroup attitudes than positive contact, albeit negative contact was reported with lower frequency than positive contact. Other studies indicated more nuanced findings (Aberson, 2015; Hayward et al., 2017). Future research on the FAB should take into account both positive and negative prior contact, as the latter may play a larger role for negative outgroup memory affect.

Interventions based on intergroup contact have largely focused on promoting positive attitudes, intentions and behavior towards outgroups (Birtel et al., 2018; Miles & Crisp, 2014; Pettigrew & Tropp, 2011). This research suggests that contact interventions may also be able to slow down a decline of positive outgroup affect. This is important for capitalizing on the power of contact in enhancing intergroup relations, and preserving its positive impact over time. Future research could examine further this association between contact and positive affect change. Such contact effects may not only be beneficial for intergroup relations, but also for wellbeing. In the presented research, positive memories were perceived to be remembered better than negative memories, indicating that negative affect with autobiographical memories fades faster, positive

autobiographical memories are remembered better. This may have implications for people's health and wellbeing also in intergroup contexts (see also Ritchie et al., 2015). Recovering from negative events in life could be facilitated through a greater memory for positive events and a persistence of positive emotions associated with such events, not only in individual and interpersonal situations but also in intergroup context, that are characterized by negative situations and emotions such as identity threat or discrimination. Preventing positive outgroup affect from fading may facilitate people's willingness to see future contact with outgroup members.

Limitations

We acknowledge some limitations of our presented research. Firstly, we are unable to establish causality with our design, future research should test the FAB and its mechanisms in an intergroup context using a longitudinal design. Our work provides first evidence that the FAB may be independent of the intergroup context, and that intergroup contact may play a role in faded affect in contact memories.

Secondly, participants were asked to recall emotions of events that happened in the past, instead of at the time of the event. An early criticism of FAB research was that reports of affect associated with memories could underly a retrospective bias and therefore be an artefact of methodology, contributing to or explaining the FAB effect. The validity of the FAB has now been established in studies using various weaker and stronger designs (Ritchie et al., 2006; 2015; Walker et al., 1997). If retrospective biases could explain the FAB, then the FAB should disappear in studies that asked participants to report their emotions at the time they experienced the event (instead of retrospectively) and then again after an interval, however, the FAB still

occurs in such designs that control for the age of the event (Walker et al., 1997). However, to provide stronger evidence, future research could replicate this work using a longitudinal design.

Third, both studies had an imbalance between female and male participants, in particular Study 1 had a higher number of women than men in the sample. Future research may examine, with appropriate sample sizes for both women and men, whether there are gender differences in the FAB in intergroup relations.

Conclusion

The power of positive and negative experiences and emotions is studied in different literatures, such as autobiographical memories and intergroup relations. The present research tests the competing hypotheses and sheds light onto mechanisms involved in contact and outgroup affect change. Intergroup contact appears to play a role not only for prejudice-reduction but also being associated with a lower faded positive affect related to outgroup memories. These findings could inform prejudice-interventions, capitalizing on the power of emotions in intergroup relations.

Footnotes

[1] Other measures were employed that were part of a larger project and not relevant to the present research.

[2] A sensitivity analysis (repeated measures ANOVA, $\alpha = .05$, power = .80) showed that the minimally detectable effect by Study 1 was Cohen's $f = 0.16$ ($\eta 2 = 0.025$), a small effect size given the sample size ($N = 76$). Our effect sizes are larger ($\eta 2 = .22$ and above). For Study 2 ($N = 242$), the minimally detectable effect was Cohen's $f = 0.09$ ($\eta 2 = 0.008$), our effect sizes are larger ($\eta 2 = .17$ and above).

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Table 1

Means, Standard Deviations and Correlations among the Constructs, Study 2 (N = 242)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. Contact quality	-							
2. Contact quantity	.43***	-						
3. Outgroup memory strength – positive	.25***	.21**	-					
4. Outgroup member evaluation – positive	.31***	.18**	.38***	-				
5. Outgroup affect change – positive	.04	.08	-.13*	-.14*	-			
6. Outgroup memory strength – negative	.03	.11	.31***	.07	-.07	-		
7. Outgroup member evaluation – negative	.10	.09	-.04	-.03	.02	-.15*	-	
8. Outgroup affect change – negative	.10	-.15*	-.001	.05	.06	-.15*	.15*	-
Mean	5.11	6.02	6.16	84.30	0.13	5.69	35.78	1.04
SD	0.96	1.27	1.09	16.39	0.76	1.34	30.47	1.62

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Total, Direct, and Indirect Effects of Contact on Positive Outgroup Affect Change, Mediated by Memory Strength and by Outgroup Member Evaluation, Study 2 (N = 242)

				95% CI	
Mediator	*B*	*SE (B)*	*p*	*LL*	*UL*
Outgroup Memory Strength					
Total effect	.004	.01	.392	–	–
Direct effect	.01	.01	.146	–	–
Indirect effect	-.003	.002	–	-0.01	-0.0002
Outgroup Member Evaluation					
Total effect	.004	.01	.392	–	–
Direct effect	.01	.01	.109	–	–
Indirect effect	-.004	.002	–	-0.01	-0.001

Note. B = unstandardized coefficient, *SE* = standard error, *p* reported two-tailed, CI = confidence interval, 95% CI bootstrapping (5000 resamples), *LL* = lower limit, *UL* = upper limit. Contact

Table 3

Total, Direct, and Indirect Effects of Contact on Negative Outgroup Affect Change, Mediated by Memory Strength and by Outgroup Member Evaluation, Study 2 (N = 242)

				95% CI	
Mediator	*B*	*SE (B)*	*p*	*LL*	*UL*
Outgroup Memory Strength					
Total effect	-.002	.01	.863	–	–
Direct effect	-.0002	.01	.982	–	–
Indirect effect	-.002	.002	–	-0.007	0.001
Outgroup Member Evaluation					
Total effect	-.002	.01	.863	–	–
Direct effect	-.005	.01	.663	–	–
Indirect effect	.003	.002	–	-0.001	0.008

Note. B = unstandardized coefficient, *SE* = standard error, *p* reported two-tailed, CI = confidence interval, 95% CI bootstrapping (5000 resamples), *LL* = lower limit, *UL* = upper limit.